U.S. Department
of the Interior

National Park
Service

GRIST

November/December 1981
Volume 25/Number 6

Foreign Visitors - An Update on NPS Responses

In November 1978, the National Park Service's National Capital Region conducted the first NPS Training Program designed to improve visitor services for the thousands of foreign visitors who come to the park sites every year.

The objectives of the course were:

1) Recognize the importance of the National Park Service's role in international relations.

2) Identify the special needs of foreign visitors.

3) Identify existing resources and services in the Region and city to assist these visitors.

4) Develop personal and site strategies to meet the above noted "special needs."

Since that course was given, many things have happened within the National Park Service to improve the service provided for foreign visitors.

Last winter, NPS Director Russell Dickenson convened a special task force to determine ways to improve services for non-English speaking visitors. In cooperation with the NPS Division of Interpretation and Visitor Services, Ed Pilley of the NPS Western Regional Office and Joan Anzelmo of Yellowstone National Park teamed up to develop recommendations.

Many of these recommendations, including more multi-lingual publications, signs, and self-service audio tapes, may be tested in a pilot program at one or more heavily visited parks. The task force recommended also that lists of bilingual employees and area residents be posted for emergency situations, and that hiring criteria for seasonal park employees be based partially on bilingual ability, where appropriate.

Priscilla Baker, special assistant to the NPS Director, will work with in-

(Continued on p. 42)

Visitors Considered

Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

Russell E. Dickenson, Director
National Park Service

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National Recreation and Park Association

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Contractors to the Park Practice Program

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The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

Foreign Visitors - An Update on NPS Responses

(Continued from p. 41)

ternational travel organizations to ensure that current information about the parks is available in foreign countries. Baker stresses the importance of providing visitors with accurate information about services, regulations, and foreign language capabilities at various national parks before they embark on a trip to the United States.

Roy Graybill, Visitor Services Specialist with the NPS Division of Interpretation and Visitor Services will be developing a resource book for park personnel to assist them in getting information to deal with non-English speaking visitors to their areas.

Services and concern for non-English speaking visitors are common throughout the National Park Service. Independence National Historical Park, PA, offers interpretive programs in several languages. The park offers folders in French, Spanish, German, Italian, Russian, Chinese, Japanese, Polish and Dutch. Tapes and films also are available in foreign languages. Yellowstone, Yosemite, Grand Canyon, and several other national parks, including the National Capital Parks, offer brochures and programs in many languages. French- and German-speaking visitors can be welcomed in their own languages at Bryce Canyon National Park, Utah.

In addition, since about 60 percent of the Grand Canyon National Park's international visitors are Japanese, Japan recently loaned one of its national park rangers to the park. Masahira Ohta will be at the Grand Canyon for a year, giving lectures, translating brochures, and helping Japanese visitors. He also will travel to other Park Service sites to help park personnel evaluate how they can better serve Japanese guests.

Millions of people from other countries flock to Yellowstone, Yosemite, Grand Canyon and other national park areas, which domestic and overseas travel organizations promote widely in brochures, magazines and books. Officials at Grand Canyon National Park, for example, estimate that more than 20 percent of the park's 2.6 million annual visitors are from other countries. In 1981 more than 23 million international visitors are expected to come to the U.S. for recreational purposes, with many of them likely to visit national parks.

Park Service officials say the Service has a vital role in fostering fruitful international relationships through contacts with millions of foreign visitors each year. And, says Director Dickenson, "how we receive and assist them is critical to the general impression these visitors will have of the United States and take back to share with others at home."
Portions of this article apeared in *In Touch*, No. 28, and the September 1981 issue of the *NPS Courier*.

"After-hours" Informational Services

Park Technician Frederick Bradley of Great Smoky Mountains National Park provides us with this idea for saving manpower and providing informational services to visitors after the visitor center is closed.

On a suitable piece of window-sized plywood, Bradley suggests that a park map be painted to show the locations of roads and campgrounds with distances from the visitor center to outlying areas. "Full" or "closed" signs can be hung over campground locations on map to convey the existing situations.

The plywood map is then hinged to a window to swing open from inside the visitor center. The map can be lighted from inside with a 40-watt

fluorescent light. A wooden dispenser is placed on the outside to hold park newspaper or other orientation material.

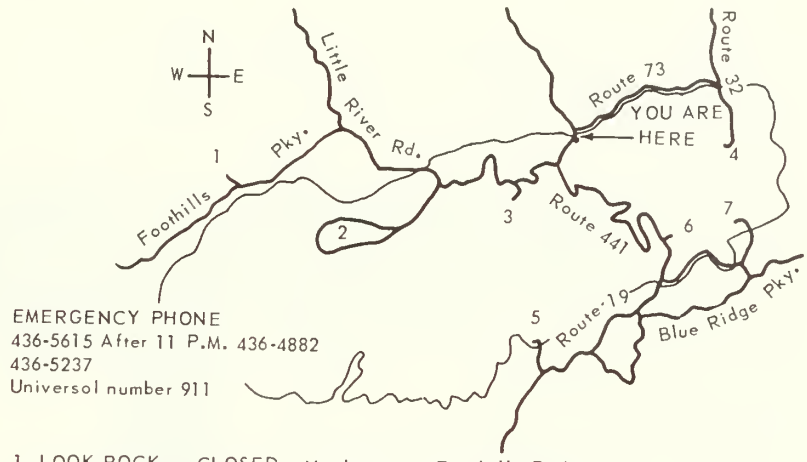
Approximately 544 man-hours were saved at the Sugarlands visitor center in 1980. For this suggestion, Bradley received a $50 National Park Service incentive award.

Up-Graded Maps Help Lead the Way

Many visitor centers display area relief maps to aid patrons in their understanding and appreciation of park benefits.

To augment this interest, park technician Brenda Jean Burchett of the Cumberland Gap National Historical Park (KY, VA, TN), used overlays on existing park maps. These sturdily constructed overlays illustrate terrain, landmarks, points of special interest, and the history of the park.

The maps are good visual aids to the park interpreters. In addition, park staff save both time and effort when these maps were set up at various points for individual visitor use.



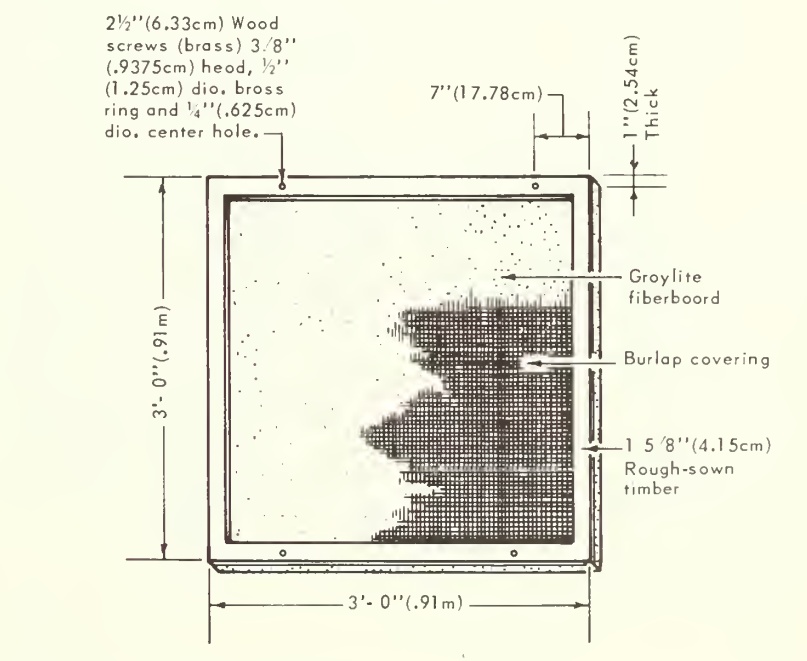
1. LOOK ROCK	CLOSED	Northwest on Foothills Porkway
2. CADES COVE	25 miles	West on Little River Rood
3. ELKMONT	6 miles	West on Little River Road
4. COSBY	CLOSED	Eost on 72 - South on 32
5. DEEP CREEK	CLOSED	Southwest on 441 - South on 19 West
6. SMOKEMONT	26 miles	South on 441
7. BALSAM MTN.	CLOSED	Southeost on 441 - South on Blue Ridge Pky. East

Interior Bulletin Board

This plan for a relatively simple interior bulletin board was provided by Gordon C. Mallar, Jr., Administrative Assistant for the Arkansas State Parks Division. The design is one which is included in the Arkansas State Parks Design Standards Manual.

The frame is constructed of 1 5/8"x1" hard wood. The bulletin board itself is graylite fiberboard covered with burlap. The burlap can, of course, be any color to blend with its surroundings.

There are a number of possible ways of mounting the bulletin board to a wall but the method suggested in the manual is to attach it directly to the wall with ¼" x 2½" wood screws.



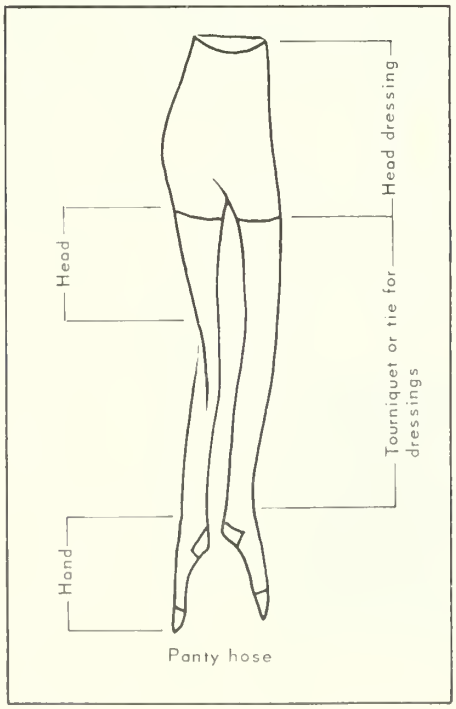
First Aid and Security

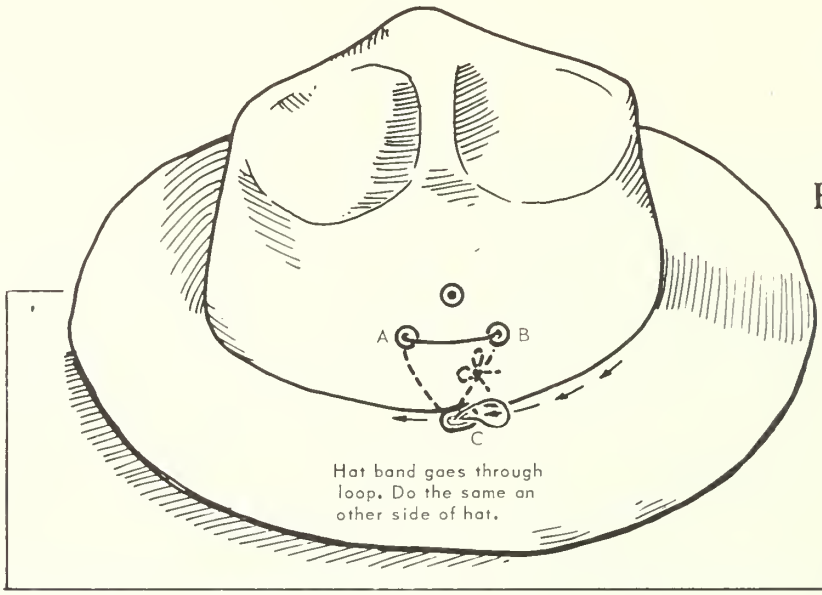
Panty Hose for First Aid

Several past issues of GRIST contained feedback sheets requesting comments on this publication and ideas to share with our readers. Norman A. Bishop of Yellowstone NP responded with this new use for old panty hose.

Bishop suggests using panty hose for first aid treatment. When treating hand injuries, the hand holds a tennis ball or roll of gauze to keep hand open. The dressing is placed on the hand and the foot of the hose is pulled over the dressing to keep dressing in place and hand in position.

The hose legs can be used to tie dressings in place or can serve as a tourniquet. The panty portion, or top of leg if the size is large enough, can hold a head dressing in place. Thanks, Norman, for sharing this helpful idea with GRIST readers.





End of Hatband Woes

Here's a suggestion which could be headlined:

"Hold onto your hats."

But more precisely, it has to do with hatbands—the loss of hatbands due to loose fittings.

Dona Appel, park technician at the National Park Service's Hampton National Historic Site in Baltimore, Maryland, states the problem this way: "If a hatband is slightly loose, it will not stay in proper position (may loosen) and may be lost."

Her solution can be completed in less time (about two minutes, she says) than it takes to describe.

". . . (to) prevent loss of hatband on hat with grommets, run length of transparent nylon thread between grommets A & B directly above the hatband. Knot on inside of hat through grommet A, over hatband and down through grommet C. Wrap thread around chin strap (immediately below hatbrim) and bring thread up through grommet C over hatband to grommet B. Run thread from grommet B to A on inside of hat. From grommet A, repeat threading once more, making final knot on inside of hat. Repeat on opposite side of hat."

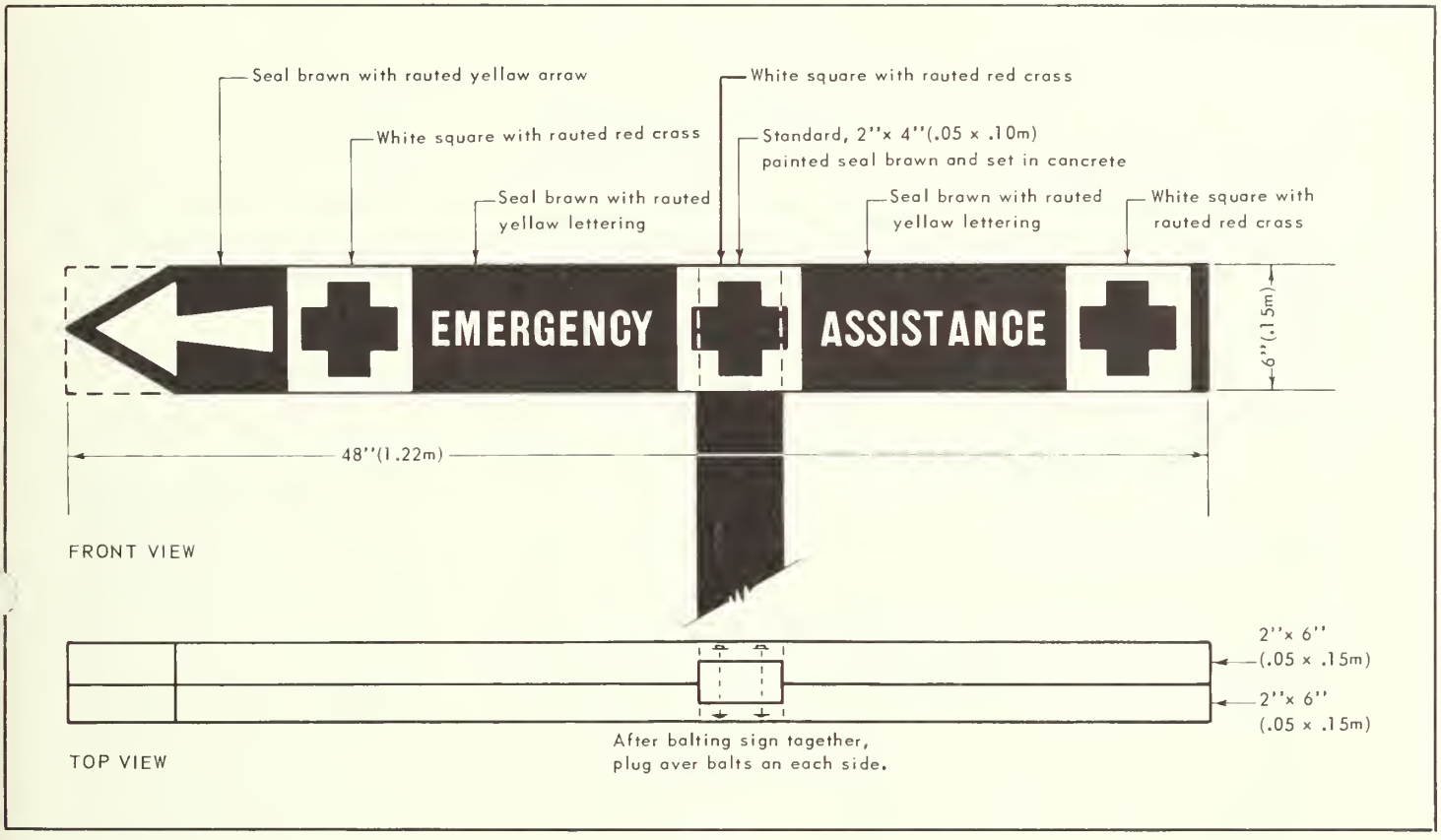
Appel received a $25 National Park Service incentive award for this suggestion.

Seal Security

Daniel D. Traylor, park guard at the Jefferson National Expansion Memorial NHS has come up with an idea to make the JNEM complex more secure.

On the security guard's first detex round, he or she places a seal (plastic or tin) on all the exit bars of the exterior doors to the building. The guard can then determine, on subsequent rounds, whether a particular door has been used. This sealing method would add to the prevention of small thefts from the inside. It would help eliminate the presence of unauthorized persons and prevent possible vandalism. Also, employees are made aware of this safeguard system so that no one would enter the building via unauthorized access areas. Cost for a year's supply of plastic seals is approximately $27.00.

For this security suggestion, Traylor was granted a $50 National Park Service incentive award.

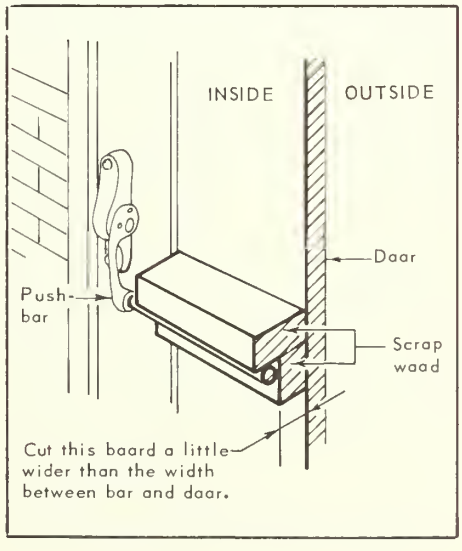


First Aid/Medical Assistance Sign

Lewis F. Beer, disposal plant operator at Yellowstone NP (WY, MT, ID) developed this helpful first aid/medical assistance sign.

This simple, easy to understand sign uses symbols, shapes and few words to convey the direction, type of assistance (medical) available and limitation of aid (first aid). The sign can be installed at proper traffic locations where it would receive the most visibility.

Beer received a $200.00 National Park Service incentive award for this helpful suggestion.



Pushbar Jam

The staff at Coulee Dam National Recreational Area, Washington, has pitched an idea that shuts out burglars, and the score is definitely on the side of the good guys.

By using scraps of 2" x 4" (5 cm x 10 cm) lumber, the staff constructed simple wedges to prevent the accidental or deliberate opening of pushbar doors. The scrap blocks of wood are cut to the width of the space between the pushbar and the door. The block prevents the door from opening. By simply removing the block, the door can be opened from the inside in case of an emergency. As a bonus, the block becomes a doorstop when not in use in the pushbar.

Coping with Austerity

Trimming Bid Lists Costs

Costs for postage and preparation of bid packages keep going up. One way to trim costs is to trim from lists those contractors who are not interested in receiving certain bid packages.

As Phyllis A. Dobson of the interior Department's U.S. Fish and Wildlife Service phrased it in her Incentive Awards suggestion:

> "In many instances, solicitations are sent to firms who are not interested in bidding due to geographic locations or not having the wherewithal for the required effort. . ."

Dobson designed this form to supplement information furnished with the SF-129. The checklist form specifies the type of services and the geographical restraints of would-be bidders.

SUPPLEMENTAL CONSTRUCTION CHECKLIST

Check if your company provides the following services.

1. Construction

A. Earthwork _____
   1. Grading _____
   2. Bridges _____
   3. Paving _____
   4. Crushing _____
   5. Culvert _____
   6. Erosion Control _____
   7. Guard Rail _____
   8. Smokeless Burning _____

B. Roads and Bridges _____

C. Site work & Buildings _____

D. Pipelines _____

E. Fencing _____

F. Well Drilling _____

G. Dike Rehab _____

H. General Construction _____

I. Other (Please Specify) _____

_____

_____

_____

What states would you be willing to work in? _____

_____

Dobson's form, submitted to the U.S. F&WS Region 6, Denver, could be modified from its construction format to accommodate most other disciplines.

Our thanks to Marvin P. Duncan, Incentive Awards Committee Chairman, F&WS Region 6, for sharing Dobson's suggestion with GRIST readers.

Conserving Fuel

Do you ever wonder how much gasoline or diesel fuel is lost in filling small engine tanks through spillage, incorrect nozzles at dispensing tanks, evaporation, improper venting? Dennis Latta, park technician at George Rogers Clark NHP, offers the following suggestions on saving that costly fuel.

a. Eliminate the use of portable pull-out spout of flex spout fuel cans as the seal from can to spout is never fluid tight. Use only fuel cans with rigid spouts, and use these in conjunction with appropriate size funnels.

b. Avoid the habit of topping out fuel tanks. Fill small tanks only when they are a quarter or less full.

c. Insulate small fuel tanks from engine heat with appropriate types of fire resistant insulation. This will cut down on gasoline evaporation as well as make the small engine safer to operate. Great care must be taken, however, not to cut off air circulation to heat radiating fins surrounding the engine cylinder(s).

d. If possible, buy new equipment with baffled fuel tanks to lower motion swish and evaporation.

e. Install automatic shut-off nozzles at fuel dispensing tanks.

e. Shelter fuel sheds or above ground fuel tanks from direct sunlight.

g. When buying new portable fuel tanks, check to see if adequate venting is provided for to insure smooth gas flow from tank to tank.

Energy Policy

In 1978, the Fairfax County Park Authority (FCPA) in Virginia, adopted an energy management policy that encompassed the following:

1. Master Planning procedures shall include consideration of energy efficient design, landscaping and the environmental and economic impact of energy usage pertaining to park development.

2. Planning emphasis on low energy intensive maintenance areas and recreational facilities shall be encouraged.

3. Cooperative agreements with local, state and federal mass transit officials and non-vehicular modes of travel to parks shall be promoted to ensure continuing access to parklands for all citizens.

4. Operational and maintenance procedures shall be periodically reviewed and revised as necessary to implement energy conservation measures and optimize the management of natural, human and built energy systems.

5. Educational opportunities regarding energy conservation/management shall be provided to park users and Authority staff.

Since adopting the policy the FCPA has moved forward aggressively in its commitment to energy conservation. The FCPA was one of the first park systems in the country to fully implement the National Park Service's energy planning and management program for state and local parks. Since November 1980, the NPS program has provided the planning methodology for the FCPA to implement its energy management policy and a 10 percent reduction in energy use during FY 81 has been effected.

Energy efficiency is now considered in master planning procedures for all building construction specifications, outdoor lighting, and vegetation landscaping. Mowing schedules have been reduced and selected areas are seeded with wildflowers rather than turf. The FCPA has developed a list of basic operational procedures for all park managers to reduce energy costs.

Fairfax County's Mount Vernon Ice Rink/Swimming Pool Sports Complex, which opened to the public in November 1980, incorporates a waste-heat recovery system that is expected to produce 95 percent of the pool's hot water and space heating requirements. In July 1981, the Park Authority approved a design/build/financing bid package for retrofitting the Wakefield Recreation Center with active solar hot-water heating for the indoor swimming pool, and a feasibility study to incorporate computerized energy management systems into major recreation facilities.

For further information about the Fairfax County Park Authority's energy management program, contact Susan Allen or Mike Kane, Co-Chairpersons, Energy Task Force, Fairfax County Park Authority, 4030 Hummer Road, Annandale, Virginia 22003.

"Expert 400 Mileage Maker" Reinforces Gas-Saving Driving Habits

With gasoline in the general range of $1.50/gallon these days, it's not surprising that more and more attention is being paid to devices that purport to increase vehicle fuel efficiency.

One class of these devices, often referred to as 'behavioral modifiers,' has attracted increasing notice lately, because its function is to alter the driving performance of the driver, not the vehicle being driven.

Manifold vacuum gauges fall into this category of gas savers, and one such gauge, the "Expert 400 Mileage Maker," has been consistently shown to increase fuel efficiency by altering a driver's 'fuelish' behavior. The Mileage Maker relays engine-efficiency information in relation to a driver's acceleration habits, and reinforces efficient techniques by means of a series of four colored lights (coded to 'poor,' 'fair,' 'good,' and 'best').

Many drivers, even 'good' drivers, have acceleration habits that increase fuel consumption, and a 'lead foot' may not know that he is one. The Mileage Maker makes the driver aware of his fuel-wasting habits, while at the same time strengthening those driving habits that are fuel conservative. Thus the term 'behavioral modifier.'

The Expert 400 Mileage Maker is currently being used in the Atlantic Richfield Co.'s "Drive For Conservation" project and the Michigan Driver & Traffic Safety Education Association's driver education program for teachers, in an attempt to convey this concept of fuel-efficient driving to the general public.

For further information contact W.S.I., Inc., 3021 N. Cicero, Ave., Chicago, IL 60641.

Park Boundary Marker

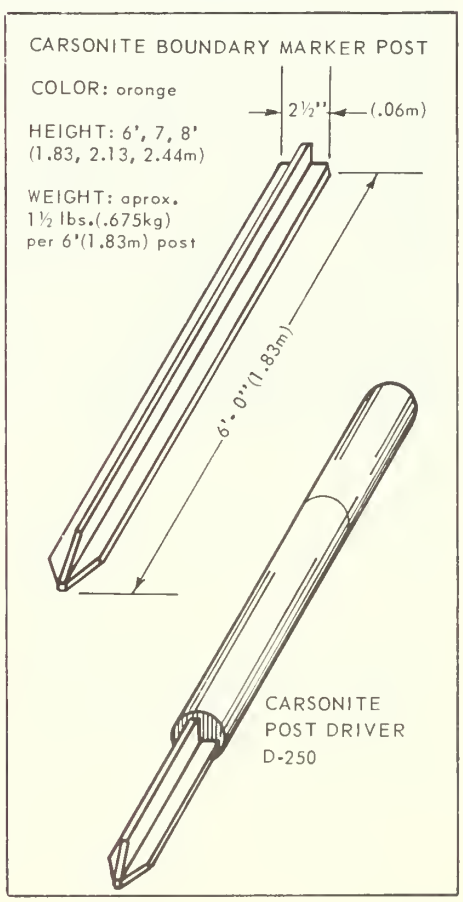
Ronald E. Cotten and Orville E. Thomas, Chief of Maintenance and Roads and Trails Foreman, respectively, at Rocky Mountain National Park came up with this cost saving proposal for boundary markers where boundary fences do not exist.

At present, six foot steel posts, costing about $9.40 each, are used to mark the park boundaries. Not only are these posts heavy, they are easily damaged by animals, weather, and vandals.

Cotten and Thomas suggest using a light-weight (about 1½ pounds per six foot length) and relatively inexpensive ($3.77 per six foot length) post made of fiberglass, marble, and thermosetting polymers. Posts of this type currently are made for the U.S. Forest Service by Carsonite International of Carson City, Nevada.

The posts are more easily packed into remote areas, will not rust, and are virtually indestructible—except by fire. Even when burned, however, the marker reportedly leaves white glass fibers for positive boundary identification.

Cotten and Thomas received a $100 National Park Service incentive award for their suggestion.



Jumpstart Message

Frequently, the need arises to help a stranded motorist with a stalled car. Often, all that is needed is a jumpstart. But if proper procedures for a safe jumpstart are not followed, an explosion can result, causing serious injury.

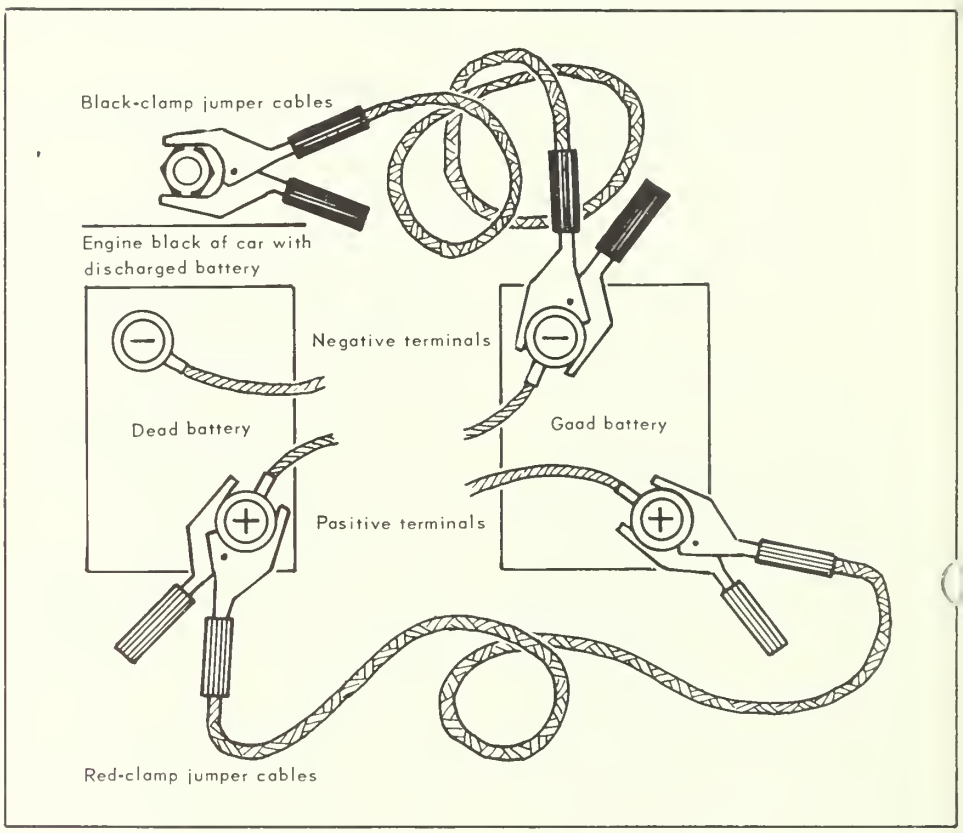
Proper procedures can be printed on a permanent decal affixed to car and truck near their batteries. In this way, the instructions are readily available and serve as a safety reminder.

The proper way to jump start an engine is:

1) Connect one booster cable to the positive (+ or POS) terminal post of the stalled car. Connect the other end of that cable to the positive (+ or POS) terminal post of the booster battery.
2) Now connect one end of the second cable to the negative (− or NEG) terminal post of the booster battery.
3) Connect the other end of the second cable to good metallic ground on the engine block of the stalled car away from the dead battery, away from the carburetor and all moving parts of the engine.
4) Start the car that has the good booster battery. Now start the other car and keep it running.
5) Remove all cables in reverse order to the above instructions.

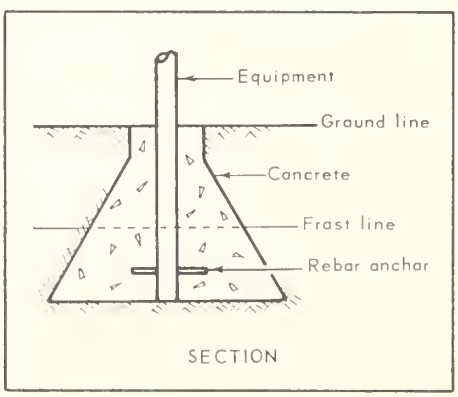
If the proper instructions are followed, time and money are saved because untrained people would be more willing to assist when a car needs to be jumpstarted. The vehicle is ready to go in less time than if a service vehicle had to be called to assist.

(Note: If done incorrectly, jumping a battery can be very dangerous to both the person working on the battery and the battery itself. Jumping a battery may not be covered in the battery's warranty.)



Apollo Hole

It is easy to forget some old tried and true tricks of the trade, so an occasional reminder helps. H. Clark Schroeder, formerly director of beach and recreation with the Town of Madison, Connecticut, provides one on anchoring recreation equipment.



Instead of shaping holes for the cement foundation like a coffee can, the holes should be shaped more like an Apollo nose cone. This is done by using a pointed shovel and angling back into the walls of the hole.

The bottom of the hole should be below the frost line. When winter freeze sets in, the ground, not the cement anchor, is pushed up. The ground will settle in the spring.

Schroeder states this anchoring is excellent for swings, climbers, tennis nets, backstops, etc.

National Park
Service

U.S. Department
of the Interior

GRIST

January/February 1982
Volume 26/Number 1

Happy 25th Anniversary, *Grist*!

This Jan/Feb 1982 issue of *Grist* marks the 25th Anniversary year of the Park Practice Program of which *Grist* is a major unit. *Grist's* Volume 1, No. 1 was issued in January 1957 under the joint sponsorship of the National Council of State Parks and the National Park Service.

Ira B. Lykes was named Chief of Park Practice in 1957, leaving his job as Superintendent of Shiloh National Military Park in Tennessee to come to Washington at the special request of NPS Director Wirth.

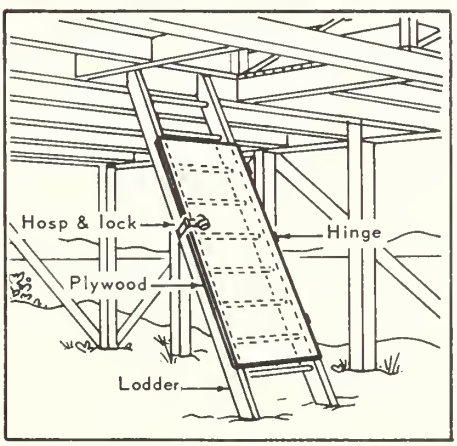
In 1962, Ira initiated a Plowback section of *Grist* which contained incentive award-winning suggestions from employees of the National Park Service. These suggestions soon were incorporated into the main section of *Grist*.

A Supplements section also appeared for several years which featured highlights of park and recreation products and equipment available from Institutes, Associations, and public sector businesses. In the main, though, *Grist* has changed little over the years, mostly because our readers and subscribers seem to want it that way.

Jim Burnett has worked on *Grist* for the past 23 years, selecting items to appear in the issues, illustrating ideas and keeping in contact with members of the park and recreation community, encouraging them to share their time-, energy- and cost-saving ideas with fellow park and recreation employees. Jim is an invaluable resource to other staff persons as well as to the readers and subscribers he serves since he has an encyclopedic recall of nearly everything that has been published in *Grist* and *Design*.

Many of the ideas that appeared in that first 1957 *Grist* issue are still usable today. For instance, a ladder lock was developed by employees of Isle Royale National Park in Michigan to keep people from climbing the ladders on water tanks and other structures.

Ira B. Lykes — Photo by Abbie Rowe



A 10- or 12-foot piece of plywood was hinged to one of the side rails to cover the lower rungs of the ladder. A hasp and lock were placed on the other side. The board fills all the space between rails, and rests solidly against the rungs making it impossible for people to get a grip or foothold in either the front or the rear of the ladder.

(Continued on p. 2)

1957 PARK • PRACTICE • PROGRAM 1982
Twenty-Fifth Anniversary

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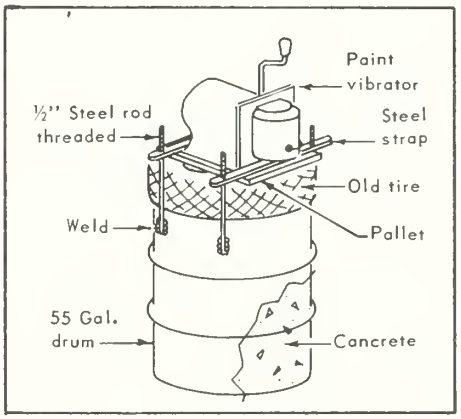
FOR SAFETY'S SAKE

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

Happy 25th Anniversary GRIST!

(Continued from p. 1)



Another useful and enduring idea that appeared in *Grist's* first issue is this mounting for a paint agitator. Concrete is poured into a 55-gallon steel drum to fill it about 1/3 of the way up, and allowed to harden for 24 hours. Four ½" steel rods, threaded on one end, are welded upright from the sides of the drum, as illustrated. The paint agitator-vibrator is mounted on a wooden pallet; a discarded truck tire is placed on top of drum between the upright rods, then the palletized vibrator is placed on top of the tire. The strap steel, which has been drilled to accommodate the upright rods, is used to hold down the vibrator pallet.

This mounting makes operation quieter, cushions vibrator, helps extend its life and permits movement from job to job. If permanent mounting of the vibrator in one place is desired, the tire method can be placed between the vibrator and the concrete base.

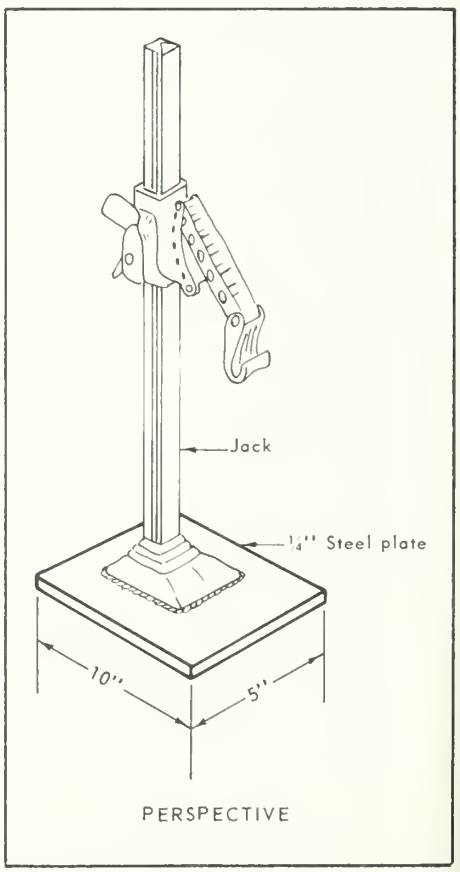
We on the Park Practice Program staff are proud to be a part of this 25th year celebration and we know you, our readers, will join with us in wishing *Grist*, along with *Trends* and *Design*, best wishes for the next 25 years!

Jack Safety Feature

Many auto jacks have very small bases (6" x 3½") or smaller that tip over easily. Also, the small base sinks into the ground when placed on dirt or soft ground, causing the jack to fall. Both of these instances can cause a hazard to the person using the jack.

James A. Carter, automotive mechanic at the Blue Ridge Parkway (NC-VA) suggests welding a metal plate (approximately 10" x 5" x ¼") to the base of the jack. This plate would strengthen the base and provide less chance for the jack to tip over.

Carter was presented a $25 National Park Service incentive award for his suggestion.



PERSPECTIVE

Safety Burp Strips

Providing safe public access to the beach was a growing problem at Playalinda Beach, Canaveral National Seashore. Twenty pedestrian crossings are available along 4.9 miles of road, and pedestrians must cross the road from the parking areas to dune crossovers. These crossovers are situated within heavily vegetated dunes which create a limited visibility for both pedestrians and vehicle operators.

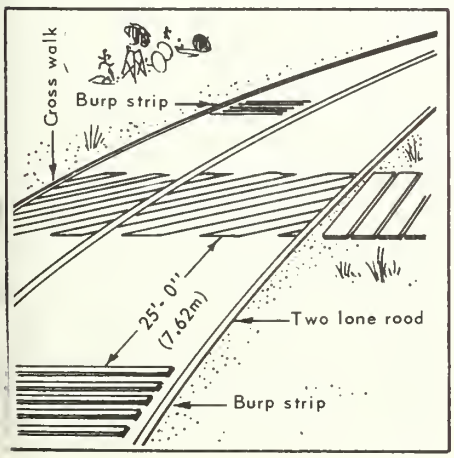
Lead Maintenance Worker Frederick D. Shott, Jr. suggested installing safety burp strips at the pedestrian crossings to reduce traffic speed.

Shott constructed a preassembled form 8' wide and 4'10" long with inside dimensions of strips 2" wide, 1" high and 1' spacing between 5 strips. He placed the preassembled form on the hard road surface about 25' from pedestrian crossings, shoveled asphalt into the five 2" wide strips, compacted the asphalt and removed the form leaving the 5 burp strips intact on the road.

Vehicle operators approaching the road experience a vibrating motion as the vehicle passes over the strips. This results in an immediate awareness of the pedestrian crossings and a reduction of vehicle speed.

Costs for these safety burp strips including asphalt and labor are approximately $200.

Shott received a $25 National Park Service incentive award for his suggestion.



Sign Post Design Modification

Chris V. Case, maintenance worker at Valley Forge National Historical Park, PA, came up with this modification to a sign post design.

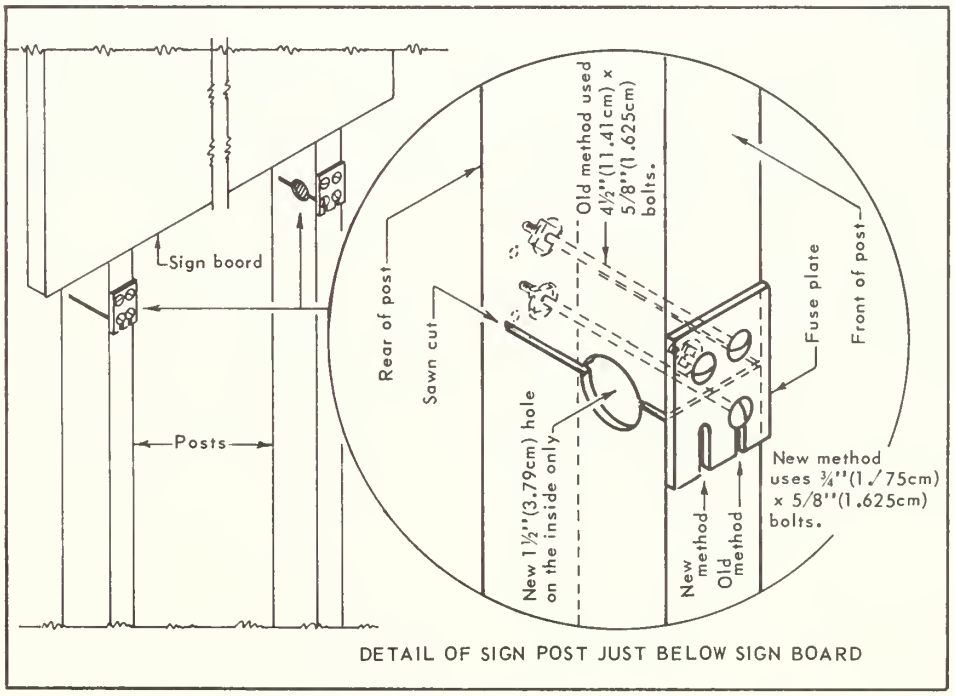
The National Park Service Signs System Specification Manual, Appendix G-10, describes construction and installation of fuse plates for the breakaway feature on multiple sign post installation. The torque specifications call for 200 ft./lbs. to be applied to the 5/8" bolts that pass through the steel tube and secure the fuse plate.

However, when the specified torque is applied, the tube begins to collapse, leaving the fuse plate attached with less than recommended torque and a weakened and distorted sign post.

To eliminate the problem of tube distortion at less than required torque, a 1½" hole was cut in the tube near the front in such a position that the center of the hole was on the same line as the saw cut made in the tube. The hole serves as an access opening so that nuts and a wrench can be applied to tighten the 5/8" bolts that pass through the fuse plate and the front of the metal tube. The proper torque can be applied to the fuse plate attaching bolts without distorting the tubular post.

The most outstanding advantage of this modification is that there is no need to redesign the fuse plate system. All that is needed is the money saving point of requiring only 5/8" x 3/4" bolts instead of the 5/8" x 4-1/2" bolts that are needed as the original plan describes.

Case received a $400 National Park Service incentive award for this suggestion.



DETAIL OF SIGN POST JUST BELOW SIGN BOARD

Maintenance

Flagpole Halyards

When halyards or ropes on the flagpole needed to be replaced, maintenance personnel would go to the top of the flagpole, run halyards through the pulley, and return to the ground. This would have to be done twice because of the two different sides to put up the flag.

Donna F. Lebo, park technician at Fort McHenry National Monument and Historic Shrine (MD) suggests taking the shackle off the old halyard, threading string through the old line end and the new line end, taping them so they form one line, and slowly running the line up the flagpole, through the pulley and down. Put the shackles on the new lines after separating the two lines.

This new method of changing the halyard can be accomplished by one person, instead of the usual three (one to go up in the chair and two to pull him or her up), and it's also safer. Lebo received a $100 National Park Service incentive award for her suggestion.

Decal Lettering

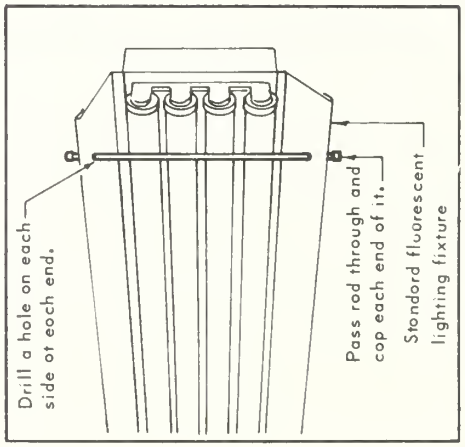
Hollis R. Freedle, Jr., maintenance worker at the Blue Ridge Parkway (NC, VA) suggests using adhesive decals to identify all road, picnic and campground litter cans. Decals improve the appearance of the litter cans and reduce costs for labor and lettering (when using stencils and paint).

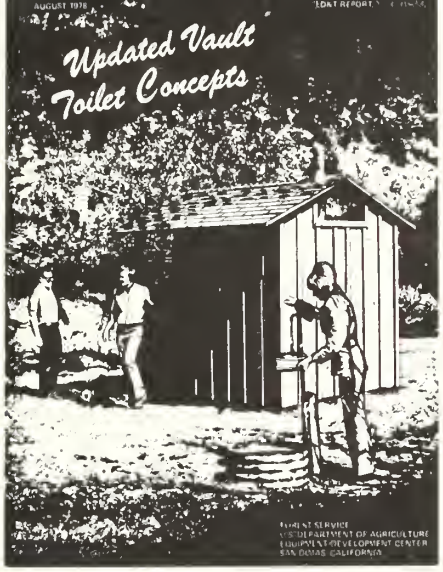
Freedle received a $40 National Park Service incentive award for his suggestion.

Installation of Light Tube Retainer

Robert A. Higdon, electrician at Cumberland Gap National Historical Park (KY, VA, TN) has devised this new method for installing a retainer for fluorescent light tubes.

Higdon suggests drilling a hole in each side of the metal fixture. Draw a rod through and fasten to each end so it cannot jiggle out.





Updated Vault Toilet Concepts

The Forest Service has available a booklet which may be of interest to managers of remote recreation sites. The booklet is *Updated Vault Toilet Concepts*, ED&T Report #2300-13 and is available from:

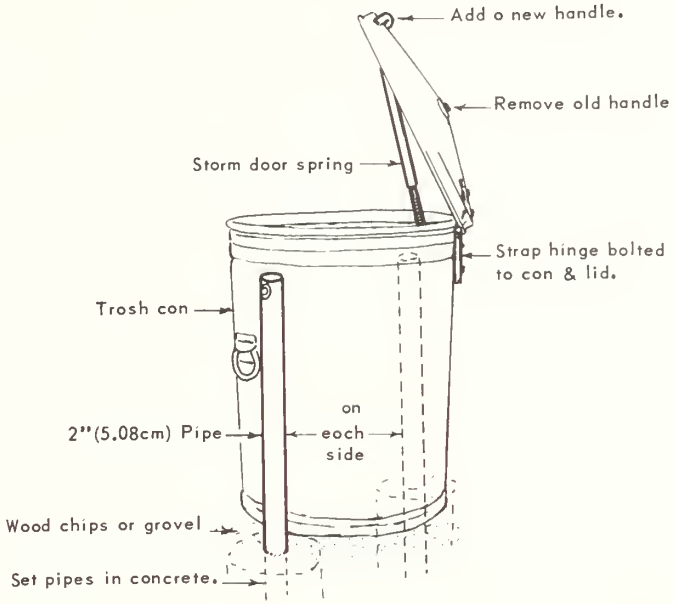
USDA, Forest Service
Equipment Development Center
San Dimas, CA 91773

The document contains information and recommendations on design, construction and maintenance of building interiors; new and revised design criteria for building and venting systems; chemical and biological additives for vault odor control; materials for constructing the vault; and, some inventory listing of the diversity of vault contents.

The booklet is liberally sprinkled with photographs and drawings illustrating design features and venting system.

Following five years of work by the Environmental Staff Engineer at the San Dimas Equipment Development Center, the Forest Service of the U.S. Department of Agriculture published this report.

ED&T Report 2300-13 folds-in four earlier ED&T projects:
#1435—*Environmental Technical Services*
#2362—*Toilet Vaults*
#2440—*Integrated Field Evaluation of Vault Toilet Systems*
#2619—*Vault Toilet Venting Systems Redesign.*



Can is bolted to standard pipes on each side. This keeps con bottom off the ground.

Securing Trash Cans

Keeping trash cans secure from roaming dogs was a problem at Cape Hatteras National Seashore until Maintenance Worker Wallace F. Mathis came up with these ideas.

A first effort was to secure trash cans so that they could not be overturned. This was done by bolting a pipe to each can and extending the pipe into the ground about twelve inches. Although helpful, this did not eliminate the problem. Dogs were still able to pull out trash, sometimes the entire bag, after knocking off the lid.

A second effort was to install a storm door spring to the lid. The spring action assures that trash cans will close securely. After a few banged heads and noses, dogs no longer cause problems as in the past. You might say that they "spring" away.

Materials cost approximately $5.00 per can.

A $200 National Park Service incentive award was presented to Mathis for his suggestion.

Securing Trash Receptacle Liners

Keeping plastic liners in trash receptacles secure was a challenge to employees of the George Rogers Clark National Historical Park (IN) until Gardener David Sorg suggested modifying the lids to keep the liners in place.

Cut away the center part of the lid, leaving only a 1" flat, horizontal ring around the rim. This ring is placed over the top of the bag holding it firmly in place. Use tin-shears to cut out the center of the lid. The cut edges are then hammered over, flat so no sharp edges are left.

When the trash is collected, the ring is easily removed, the plastic bag is collected, and a new bag is quickly fastened by the ring. This suggestion does not require the purchase of new materials; it uses an item (the lid) which is often disposed of.

Sorg received a $25 National Park Service incentive award for his suggestion.

Energy Saving

Dimmer Switches

Replacing high wattage bulbs with lower wattage ones to conserve energy is not practical for everyone. Some people require different levels of light to function normally and we all require different levels of light for different tasks.

Arthur R. Williams, chief of maintenance at Dinosaur National Monument (CO, UT) suggests replacing all on/off switches with dimmer switches which would allow individuals to adjust the lighting to suit the need.

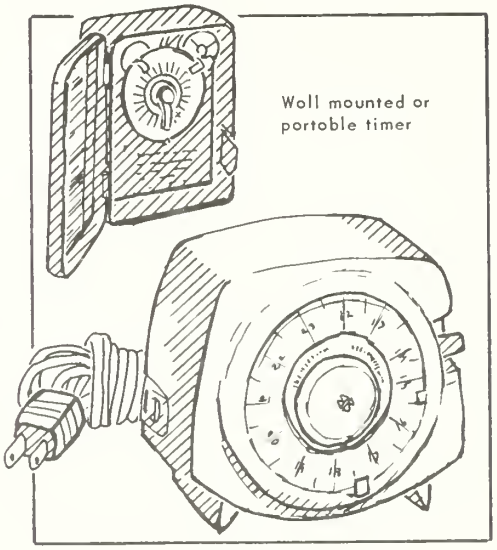
Williams received a $25 National Park Service incentive award for his suggestion.

Timer Switches

Forgetting to turn the lights off at campground kiosks at Cape Hatteras National Seashore (NC) occurred far too frequently for Loren S. Whitehead, supervisory park ranger.

Whitehead suggested using timer switches to activate the electrical lights for the exterior and interior of the self-registration booth of the kiosk.

A $50 National Park Service incentive award was presented to Whitehead for his suggestion.



Insulate Heating Thermostat

Park Technician Daniel L. Burgette has come up with a way to save money and energy at the George Rogers Clark National Historical Park in Indiana.

When the Memorial used more energy in 1979 than it did in 1980, in spite of a milder winter, Burgette felt that the energy waste was due to the setting of the thermostat. Although two thermostats are situated side by side on an outside stone wall, they often showed different temperatures on their thermometers in the winter.

The difference was that the cooling thermometer set out away from the marble wall 1½". The heating thermometer was within ¾" of the wall. The result was that the cooling thermometer more accurately measured the air temperature, and the heating thermometer was affected by the marble heat sink it was close to. Burgette set the heating thermostat on a 1" thick block of wood (foam could be used), thus insulating it from the stone wall. When the thermostat is set to 65° in the morning, the air will only be heated to 65°.

A $25 National Park Service incentive award was presented to Burgette for this energy-saving suggestion.

Homemade Cooking Stove, Part II

Professor Gerard G. Harrison of Springfield College, Springfield, MA, offers this ingenious heat control system for the simple stove that was illustrated in the Jul/Aug 1980 issue of *GRIST*.

Professor Harrison suggests that, rather than completely removing the top of the tuna fish can, you cut the top nearly all the way around. Bend up the top as indicated. Punch two holes through it and insert a portion of a coat hanger into the holes. This allows you to control the amount of heat by opening the top all the way or closing it partially.

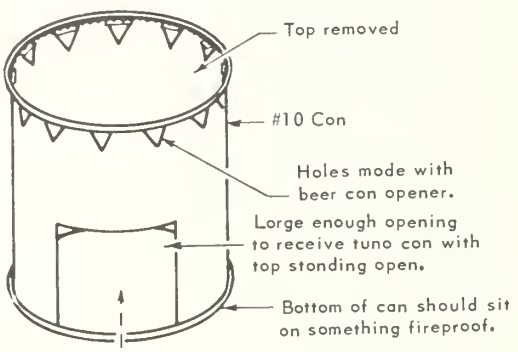
Users of this idea should keep in mind that the stove should be placed on a fire-proof surface and pot holders should be readily available to hold the hot stove.

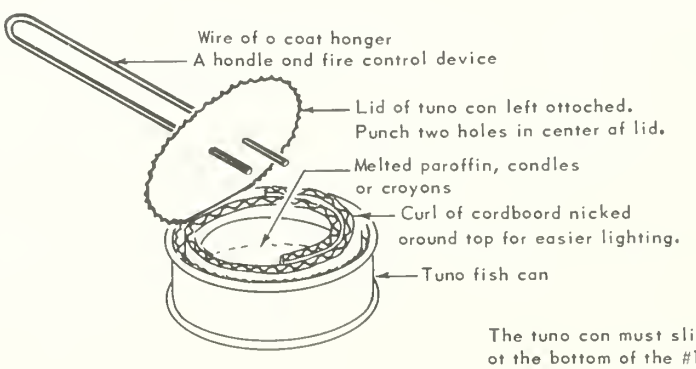
NOTE:

You will need o con opener ond tin snips to fix cons.

Use gloves or cooking mit when cooking.

Not drawn to scole





The tuno con must slide into the opening ot the bottom of the #10 con.

Operation

Keeping Park Clean

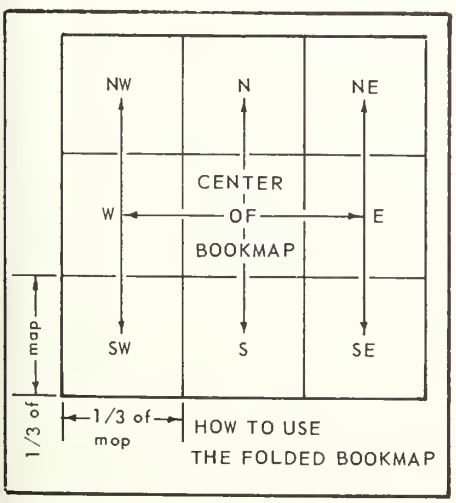
Melvin M. Sedwick, tree worker at Shenandoah National Park (VA) submitted this solution to an unsightly area 2 miles east of park headquarters.

The area was being used as a pull-off for vehicles and was littered with dumped trash which was a highway traffic hazard, and was unsightly to park visitors.

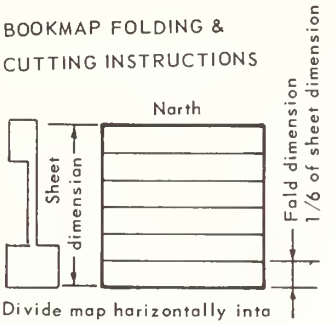
Sedwick suggested hauling in dirt, making an embankment and making the shoulders of the road meet specifications of the Highway Department. By eliminating the pull-off area, the trash problem was taken care of. This suggestion saved man-hours for cleaning the area, eliminated a traffic hazard and made the area more aesthetically-pleasing. Sedwick received a $50 National Park Service incentive award for his suggestion.

Map Folding System

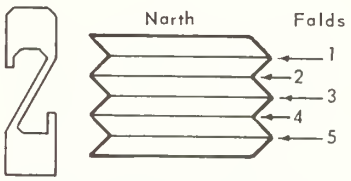
Dennis P. Fehler, landscape architect with the Forest Service's Mark Twain National Forest shares this excellent map folding system with *Grist* readers. This system is used by pilots to allow functional use of large maps in small or confined spaces. The map is folded so that one can read it like a book.



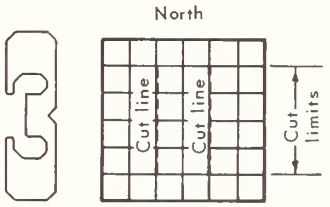
BOOKMAP FOLDING & CUTTING INSTRUCTIONS



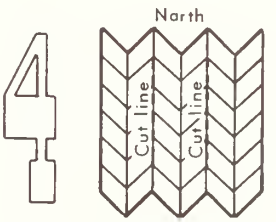
Divide map horizontally into 6 equal parts.



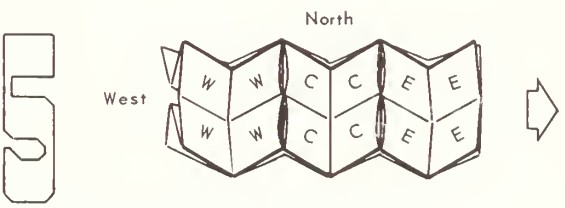
Fold accordian fashian NORTH to SOUTH – then reapen.



Repeat steps 8 and 2 in an EAST to WEST direction.

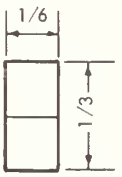


Use a sharp blade to cut where indicated.

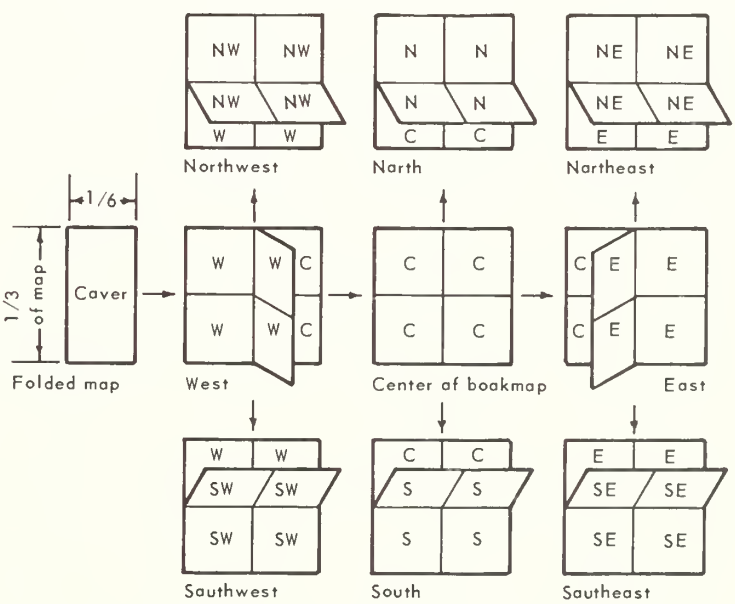


Refold accordion fashion NORTH to SOUTH and apen to center (as shown above)

Accordian fold EAST to WEST.



Complete baak 1/3 by 1/6 of original map's dimension.



HOW EACH OF THE NINE SECTIONS ARE DISPLAYED FOR READING

The Best of Grist

The National Society of Park Resources (NSPR) awarded the following published items in *Grist* as "The Best of *Grist* " for this past year. The awards were conferred in October 1981 at the NSPR banquet held during the annual National Recreation and Park Association's Congress in Minneapolis, Minnesota. Articles that appeared in Grist between July 1, 1980 and June 30, 1981 were eligible.

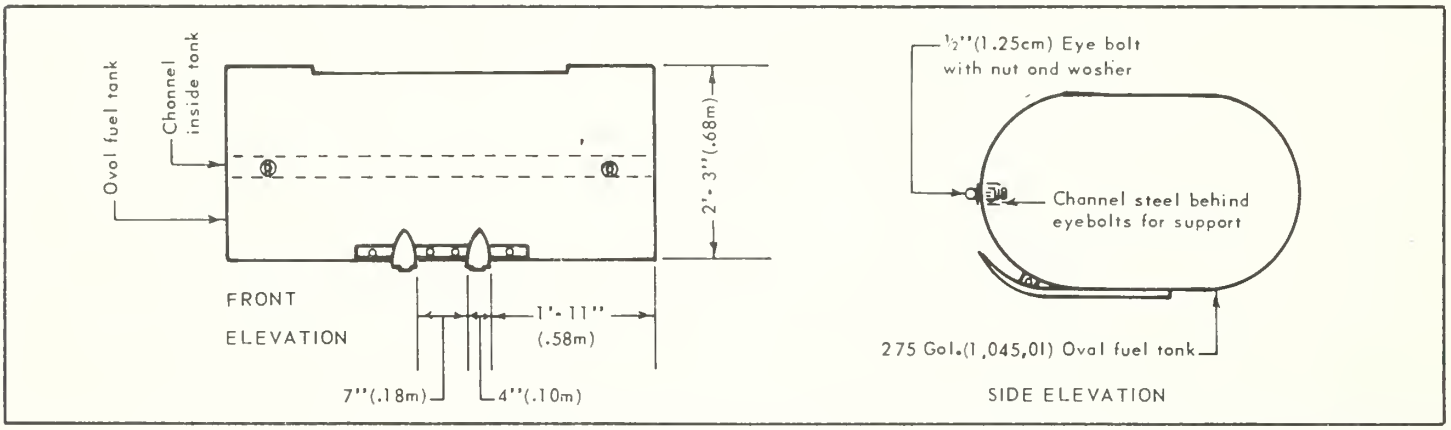
First Place Award

"Ski Trail Blazer"
by Peter J. Parsil

Park Superintendent Parsil of Pearce Valley Park, Bucks County, PA designed and used what he calls the XC Trail Blazer to create an initial cross-country skiing trail. Park maintenance staff constructed the piece of equipment from a recycled 275-gallon oval fuel tank and used snowmobile skis donated by a local dealer. The skis are fastened to the bottom of the tank and the trail blazer is pulled from ½" eyebolts attached 4" from each side.

A piece of ¾" manila rope is spliced to snap hooks for quick hook-up and the trail blazer is pulled through the snow with a Thiodol Spryte with the rope looped through a ring hitch.

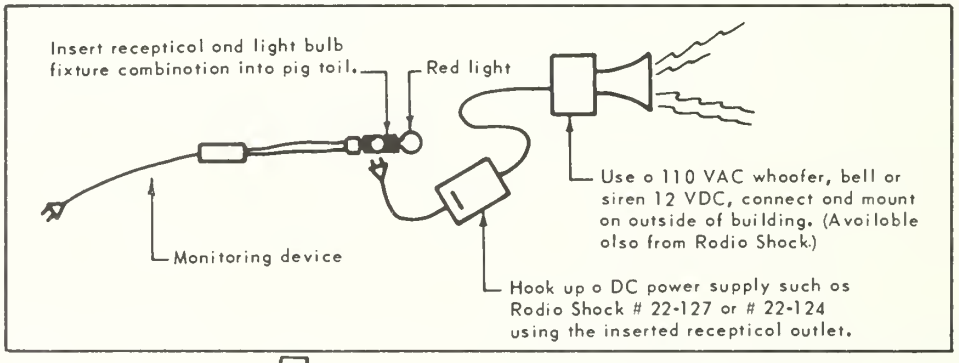
Parsil's article appeared in the Jan/Feb 1981 issue of *Grist*.



Second Place Award

"Temperature Monitoring Spots Freezing"
by Robert L. Greer

This article appeared in the Mar/Apr 1981 issue. Greer, YACC camp director in Gettysburg, PA, designed a signal light that automatically turns on when the temperature inside a building falls below 38° Fahrenheit (3° Celsius). The device simply modifies the thermostatically controlled heat tape that is commonly used to wrap water pipes to prevent them from freezing.

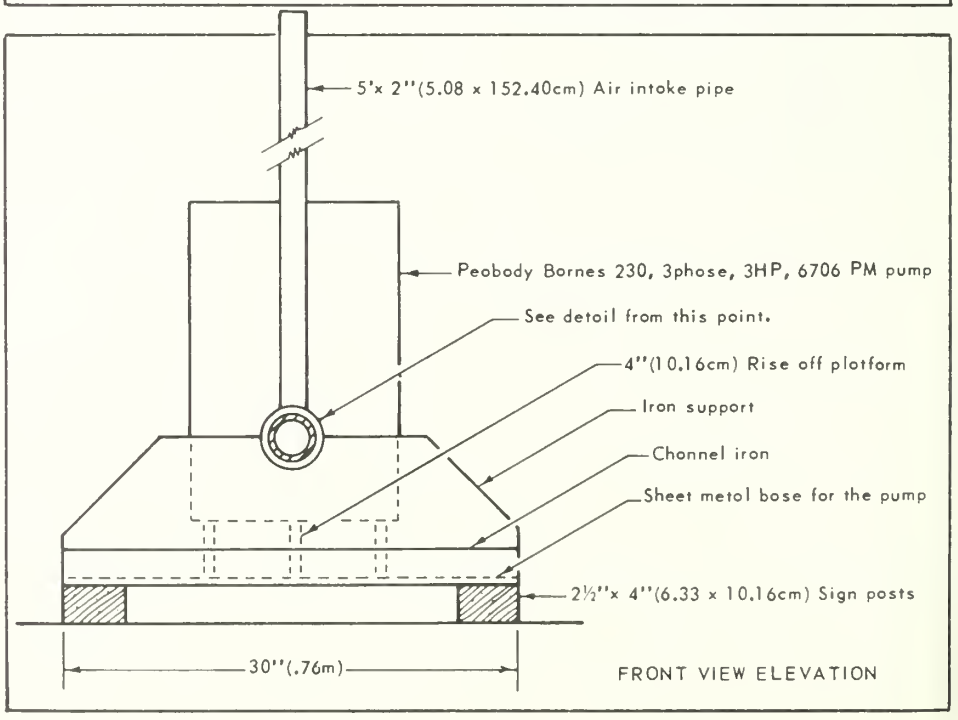


Third Place Award

"Surge Tank Mixer"
by Jackie Darrell Messer

Park worker Messer suggested building an aspirating aerator rather than buying one. Estimated cost is approximately $1,435 to include a pump; controls and starter; pipes and fittings; blacksmith, operator, mechanic, and plumber labor; and supports. A ready-made aerator costs approximately $7,481.

This award winning item appeared in the Mar/Apr 1981 issue of *Grist*.



GRIST

March/April 1982
Volume 26/Number 2

Call for Contributions

You've been on your job several years and you've developed methods to get your job done in less time. You've rigged up a contraption from materials lying around the maintenance shop that, if purchased, would cost your agency quite a bit of money. You've reduced energy consumption in your park or recreation facility by a significant amount from last year. You are busy, but you can do a great service to other park and recreation practitioners by sharing your ideas with them through *Grist*.

Grist is an exchange of ideas and devices that has been helpful in park and recreation areas that include interpretation, maintenance, safety and security, operation and administration. *Grist* readers want to see how you have solved your on-the-job problems—it may help them. That's why they subscribe to this unique publication. Our readers *use* the ideas published in *Grist*. They also build on published ideas to suit their particular needs. But by your contribution, your shared idea, you have provided the foundation without which some persons may not have been able to begin.

Grist readers and subscribers include an excellent cross section of the park and recreation community—from executives and planners to persons new in the park and recreation field. From college professors and students (who often refer to Park Practice as "the living textbook"), to interpreters, Job Corps instructors, forest rangers, Army engineers, campground owners and operators and many, many more. Many of these persons are from park and recreation areas outside the U.S. All of our readers glean the pages for new ways to save time, money and energy, or to find a better way to serve the visiting public and provide safe experiences for the visitors and employees.

A contribution to *Grist* is an excellent way of letting people know that your park has dedicated personnel trying hard to serve the public in the best possible way. By presenting an employee's accomplishment for publication, you reward originality and expertise. This recognition will encourage the park staff to submit their ideas for consideration, and instill a sense of team pride. It's also a nice way of saying to your employees "That was a job well done. I'm sure that others would like to know about it."

Many Federal agencies keep in contact with our *Grist* Editor through their Incentive Awards personnel. We periodically receive ideas developed within agencies that have been nominated for incentive awards and many of these ideas are published in *Grist*. Proper credit is given to all persons concerned, from the person who developed the idea to the person who shared it with our readers, along with their respective organizations.

Just send us a full description of your idea and a labeled diagram with dimensions of any device or product modification involved. We'd also like a black and white glossy photograph showing the application of your suggestion, if possible. This photo should be of good quality and in sharp focus for best reproduction. If a photograph is not available, your sketch showing the dimensions will do. We'll take care of the final illustration.

Material should be sent to the Editor, *Grist*, Park Practice Program, National Park Service, Department of the Interior, Washington, DC 20240. Telephone: Jim Burnett on (202) 272-3683 or FTS 8-272-3683.

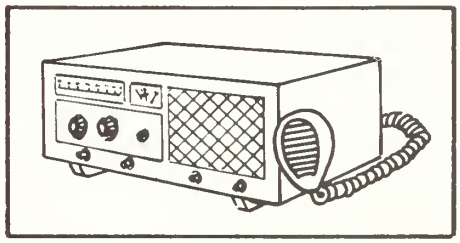
Take time today to share your, or your employees' ideas with *Grist* readers. We'd love to hear from you . . . and so would many thousands of other subscribers and readers!

Auxiliary Power Hook-up for Radios

Maintaining radio contact on Ship Island at the Gulf Islands National Seashore (FL-MS) was somewhat of a problem. Four separate radios and transmitters were used, two of which only operated off DC battery power and the other two operated off AC power.

Also, when the 5-watt portable radio was unable to contact the Davis Bayou station, the generator had to be switched on to supply AC power to a higher power radio. When there was a generator failure, the battery charge in the 5-watt portable radio was quickly depleted and the Island Ranger Station was left without radio contact.

Park Technician David Spirtes recommended the use of a 3-way toggle switch to switch between battery power and the already existing AC power of two of the radios. Spirte's supervisor,



Mike Brown, encouraged the idea and drew up a wiring diagram of how the switchboard could be built. Brown further suggested and incorporated into the wiring diagram a panel light for each toggle switch to indicate when there was a drain on the battery because of the DC use.

Spirtes then constructed a panel with four toggle switches which allows switching between AC and DC power on two of the radios, and the switching on and off of DC battery power to each of the four radios.

The panel provides three significant advantages. First, it allows the person-

(Continued on p. 11)

Visitors Considered

1957 PARK • PRACTICE • PROGRAM 1982
Twenty-Fifth Anniversary

Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

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National Park Service

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The Park Practice Program includes: *Trends*, a quarterly publication on topics of special interest in park and recreation management and programming; *Grist*, a bimonthly publication on practical solutions to everyday problems in park and recreation operations; and *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and selected back issues in vinyl binders with indices and all publications for the calendar year.

The initial membership fee is $80; annual renewal is $20. A separate subscription to *Grist* is $15 initially, and $7.50 on renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

FOR SAFETY'S SAKE

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

More on "Making All Visitors Welcome"

Steven M. Seven, park technician at Abraham Lincoln Birthplace National Historic Site (KY) liked Gregg Bruff's article on "Making All Visitors Welcome" which appeared in the Sep/Oct 1981 issue of *Grist*.

Seven says that a number of hearing-impaired persons also visit the Lincoln Birthplace NHS each year and although providing a written copy of the movie to them was helpful, he felt a way had to be found to "key" the script to the proper scene, and to provide sufficient light so that the script could be read in a dark theatre.

Seven has 3x5" photo enlargements made of the opening shot of each scene in the movie. Then, using large type, those segments of the script that corresponded to the individual movie scenes were typed on a separate sheet of paper. Each photo and its script were mounted on pieces of firm poster board and held together with loose ring binders. The photo provides the reader with a visual cue as to when that segment of the script was being read on the film.

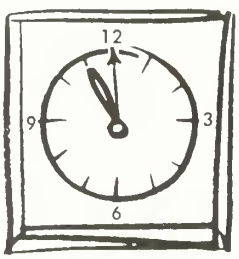
The entire package was mounted on a lighted clipboard so that the user carried his or her own small and non-distracting light source into the theatre. Seven said that this approach proved very successful and could also be adapted for use with a slide presentation.

Do You Know What Time It Is?

Jean Bullard, a long-time National Park Service employee and formerly with the NPS' Rocky Mountain Regional Office in Denver (CO) submitted this time coordination idea that she saw in use in Zion National Park (UT).

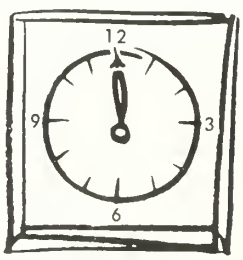
Arizona is on Mountain Standard Time except for the Indian reservations which are on Mountain Daylight Time. Utah is also on Mountain Daylight Time. Nevada and California are on Pacific Daylight Time.

Using clocks set to different time zones helps in planning transportation schedules and in making long-distance phone calls. It also helps visitors to know the correct time when arriving from other zones.



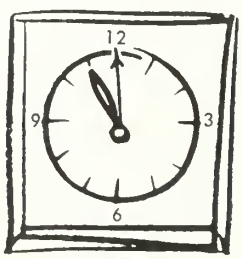
MOUNTAIN STANDARD

Arizona



MOUNTAIN DAYLIGHT

Utah & all Indian Reservations in Arizona



PACIFIC DAYLIGHT

Nevada & California

Training Tapes

Chief of Interpretation and Resource Management (I&RM) William F. Paleck of Wupatki-Sunset Crater National Monuments (AZ) developed training tapes to train new employees in the proper method of completing and coding the National Park Service 10-343 Case Incident Report.

The tapes have proved to be a useful training tool for new personnel who enter on duty during winter months when a group presentation is not possible. It is also useful during the season when several new personnel are on board as it permits an employee to concentrate individually on the subject matter at any time his or her work schedule permits. The tapes provide consistency of training to all employees in a minimum amount of time.

Bill was recommended for a $25 National Park Service incentive award for his suggestion.

Accountability Aid

National Park Service policy requires that a receipt be given for all cash received by cash register operators. This receipt provides accountability of cash received by the operator, helps avoid errors in no-pay situations, and discourages embezzlement by operators.

Park Ranger Robert W. Wightman of Great Smoky Mountains NP (NC-TN) suggests that a well-made laminated sign be attached to each cash register in park campgrounds with the following message:

> **The operator of this register is required to give you a receipt. Be sure you get one and keep it while staying in the gampground.**

Since campers often leave the proffered receipt on the counter, the sign would remind them to keep the receipt and assist the operator in cash accountability. The purpose in requesting the customer to keep the receipt in his/her possession is to reduce the possibility of its falling into the hands of fee collectors and others who might use receipts to personal advantage.

Wightman received a $50 National Park Service incentive award for this suggestion.

Dress Uniform Horse Blanket

Park Rangers on horse patrol at Valley Forge National Historical Park (PA) used plain white horse blankets under their saddles which did not identify the mounted rangers to the visiting public.

George R. Koch, park technician, suggested using a horse blanket made of a reflector-type material with the NPS arrowhead placed between the words park and ranger. The blanket is visible during the day and can be seen at a great distance in the evenings.

Koch received a $100 National Park Service incentive award for his suggestion.

AUXILIARY POWER HOOK-UP FOR RADIOS (Continued from p. 9)

nel to shut the generator down during the day, saving an average of 1 gallon of diesel fuel per hour as well as prolonging the life of the engine. The second advantage is that during an emergency, if the generator should fail, a radio can be switched to battery power almost immediately.

Finally, the panel affords better protection for the radio equipment. Each time that a radio is hooked up there is a possibility of reversing the wires and blowing a fuse or even doing irreparable damage. Because the radios are always hooked up they are not jostled around and can't be shorted out. The panel lights further protect the battery from discharge by indicating if a radio is creating a drain.

Most park radios that are used on 110-volt AC power are actually using a transformer and can be readily hooked up to a normal car battery. This auxiliary power hook-up could be used in any area where 110-volt AC power is undependable.

Spirtes was presented a $125 National Park Service incentive award for this suggestion.

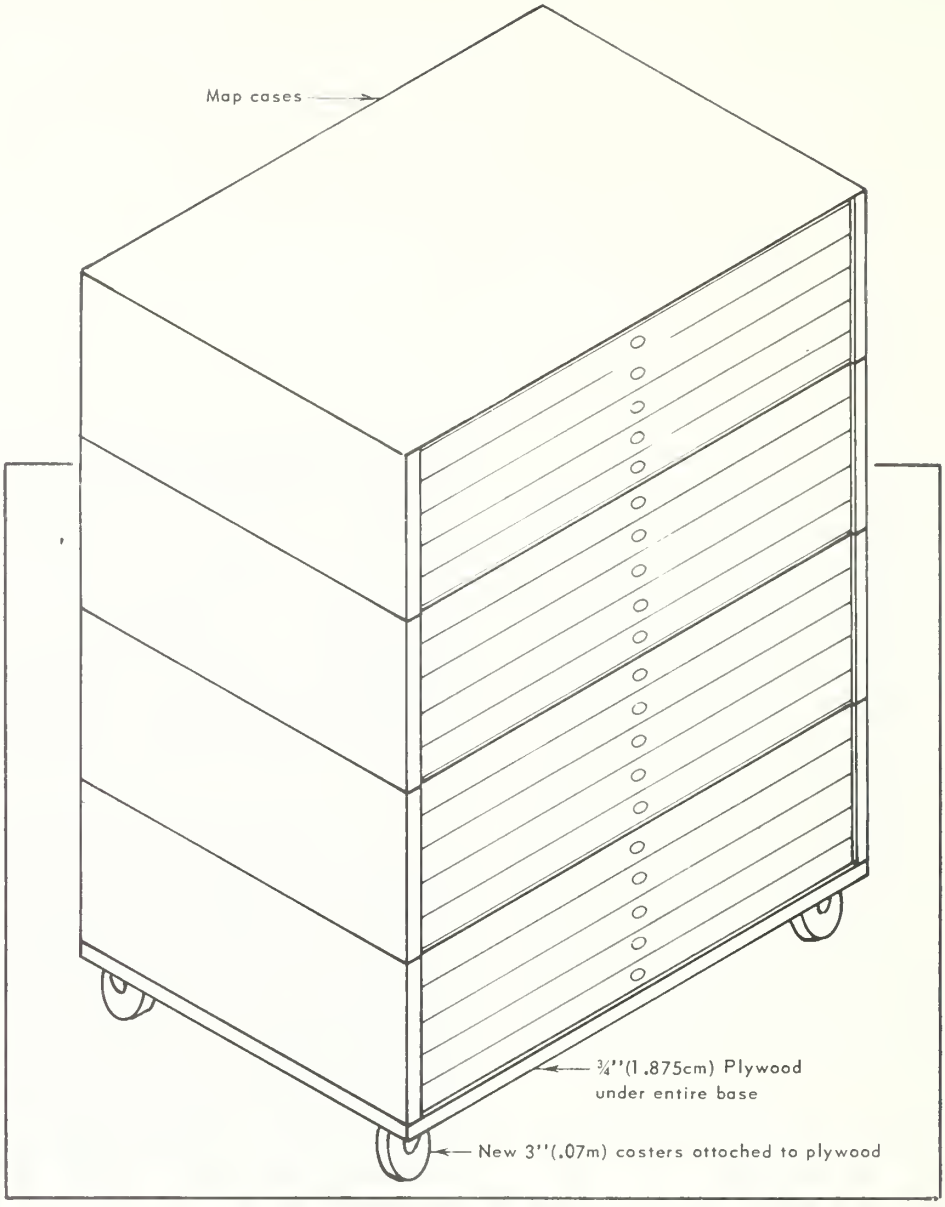
Maintenance

Map Case Dolly

After purchasing a large, 20-drawer map case, employees of Indiana Dunes National Lakeshore (IN) discovered it was impossible to move the case from one area of the office to the other intact. Each time the map case had to be moved, the 4-section case was dismantled and reassembled in the new location.

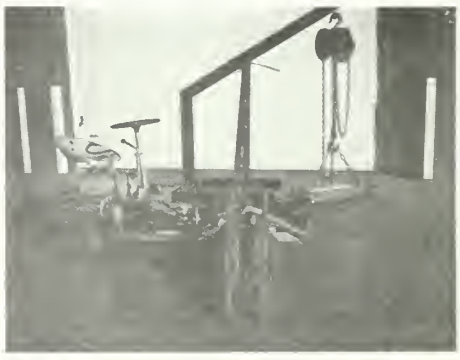
Maintenance Mechanic (Leader) Edward J. Lutz constructed this plywood dolly which made the map case easy and safe to move by one person, and secure enough so that it could not be tipped over.

Lutz was presented a $25 National Park Service incentive award for his suggestion.



Old method

New method



Headstone Puller

Cemetery headstones often have to be pulled when the ground is being leveled or when additional inscriptions are being added to the stones. Because of the close proximity of the head stones, heavy equipment cannot be used for this job, and it falls to three or four men pulling the stones by clamping two 2x4 handles to the stone.

Maintenance Mechanic Clifford R. Arbogast of Custer Battlefield National Monument (MT) solved this problem by constructing a headstone puller. A prime mover for dirt hauling was purchased which included a dirt or concrete bucket and interchangeable flat bed. Arbogast designed and built a unit out of scrap iron that one man can put on in less than ten minutes. A small surplus chain hoist and improved pulling ears complete the unit.

Although this device works fastest with two persons (one driving the prime mover and one hooking and hoisting), it can be used by one person for removing stones.

Arbogast says the device has been used to pull over five hundred stones successfully and it adds a new dimension to already useful equipment.

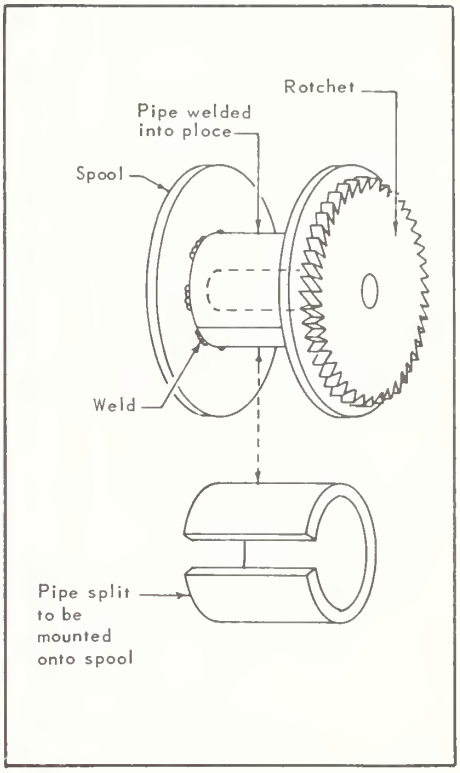
A $50 National Park Service incentive award was presented to Arbogast for this suggestion.

Heavy Door Raising Device

Raising and lowering heavy maintenance building doors used to be a back-breaking problem until Clyde Clifton, chief of maintenance at Natchez Trace Parkway (MS-TN-AL) developed a pulley and hand-crank winch type system to make the job much easier.

A 1000 lb. winch with cable and pulleys was purchased from a local boat and marine dealer. An adapter was added to the cylinder core of the spool to make raising of the door quicker and easier. A 1½" pipe was measured to correct length to fit inside the spool. It was then split down one side, spread open, slipped over the spool cylinder and forced back together, then welded to the inside of the spool ends. The mounting brackets were made from pieces of metal used in the shop. The way the bracket is mounted to the wall depends on the type of wall it will be mounted on. The mount is either reinforced with washers or a wooden board when mounted to a cinderblock wall. Materials cost approximately $30.

Clifton was presented a $25 National Park Service incentive award for his suggestion.



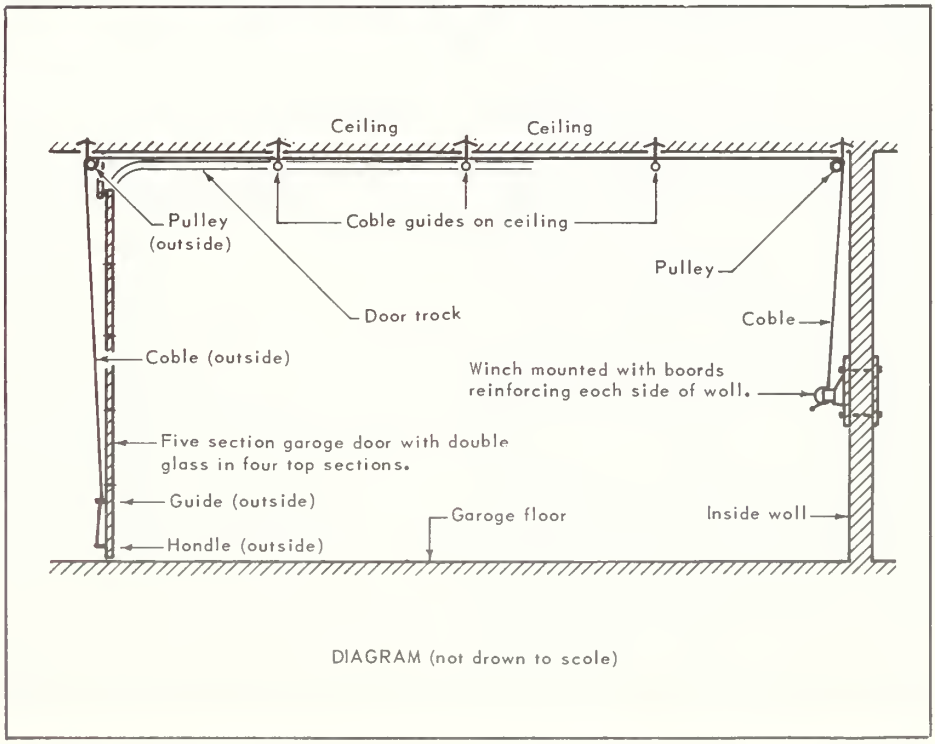


DIAGRAM (not drown to scole)

Keeping Your Cool

Employees of the maintenance department at Chamizal National Memorial (TX) used to purchase 60¢ worth of ice each day to cool the drinking water in the water cooler. By noon each day the ice had melted and the water became warm.

Motor Vehicle Operator Charles M. Davis came up with an efficient way to keep the water cool and to save money. Davis filled two empty, one-gallon plastic jugs with water and placed them in the freezer of the maintenance department's refrigerator. Each morning he places one of the jugs in the water cooler. The ice in the jug hardly melts and in turn, keeps the water cool the entire day.

Davis received a National Park Service Certificate for this beneficial suggestion.

Fire Ladder Caveat

"Making a Fire Ladder Portable" appeared in the May/Jun 1981 issue of *Grist* which featured a way to make a standard rope ladder portable and safer to use.

Connie Villar, Industrial Hygienist with the National Park Service's Division of Safety Management points out that the National Fire Protection Association's *Life Safety Code*, NFPA 101, Section 5-2.10.1 states that ladders cannot, in general, be used as primary fire escapes and those that are acceptable must be permanently installed and constructed of iron, steel, or equivalent. In other words, rope ladders are not substitutes for standard exits from a building.

Coping with Austerity

Recycled Scratch Pads, II

General Supply Specialist James T. Tate of Shenandoah National Park (VA) has come up with a slightly different method of padding recycled paper, converting it to scratch pads.

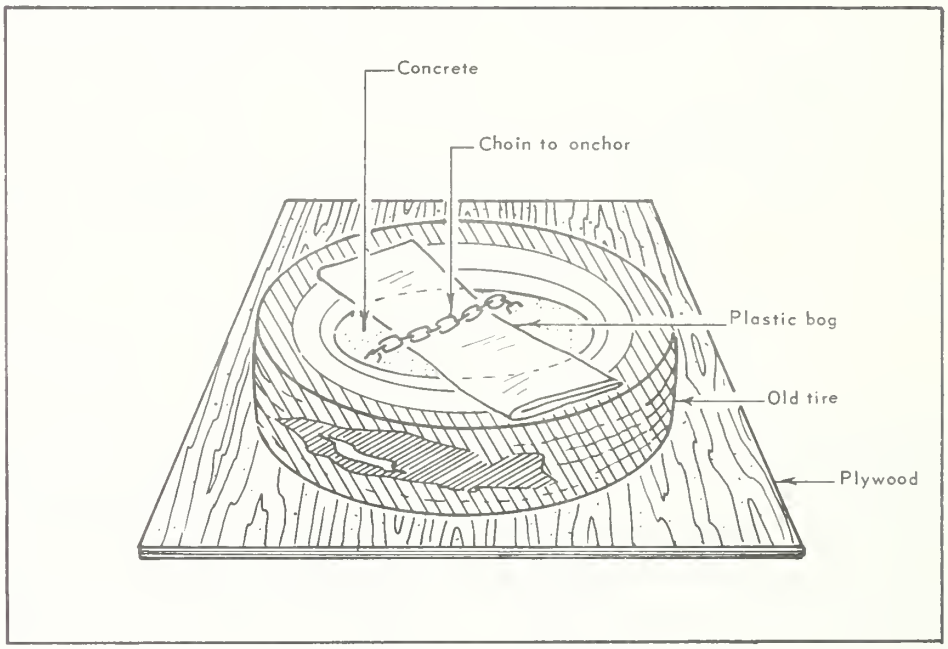
Tate takes a 12" high stack of paper and puts cardboard (saved from the back of pads from GSA, FSN 7530-000-285-3083 or cut to size from similar stock) in between the sheets about every ½ to ¾ inches. Take about 400–500 sheets, along with the cardboard, and jog them so the paper is smooth on at least two sides. Put these on the edge of a table which has been protected by a sheet of paper and repeat the jogging cycle until you have all the paper in one stack. Put weight on top of the stack until all paper is pressed down so that when you apply padding glue (available at most print shops or office supply stores) on the edge with a paint brush, it will not run in between the sheets. Let the first coat dry and apply a second coat. When completely dry, use a knife and cut under each cardboard to separate the pads.

Tate estimates the park saves approximately $75 per year by using his suggestion. A $50 National Park Service incentive award was presented to Tate for his recycling suggestion.

Recycled Tires for Buoy Anchors

H. Clark Schroeder of Madison, Connecticut has sent in a variation of a buoy anchor that was described in *Grist*.

Schroeder suggests filling the tire with concrete while it is resting on a sheet of plywood. Put both ends of a 2' chain in the wet concrete and lay plastic over the top of the wet concrete to support the middle of the chain. When the concrete is dry, remove the plastic. The center part of the chain is used to tie a piece of rope to, which will connect the buoy to the weighted tire.



Saving Energy

Kenneth Logsdon, park technician at Mammoth Cave National Park (KY) has suggested a way for the park to save energy. On trips to the Frozen Niagara formation, the trailer (guide who is the last person in the group) would turn the cave lights on while the lead guide gave a 7–8 minute talk to the group before entering the cave. Thus, the cave lights were burning needlessly for the amount of time the talk lasted. Also, this condition of unnecessary light fostered the growth of algae and moss.

Logsdon suggested having the lead guide turn the cave lights on after his presentation just as the group prepared to enter the cave, thereby saving energy and reducing algae and moss growth in the cave.

For the first 9 months of adjusted operation, using the low figure of 8 minutes per trip, a projected savings of *315 hours* was recorded. Percentage-wise, this represents an immediate 16.6% savings and a substantial reduction in energy consumption and expense.

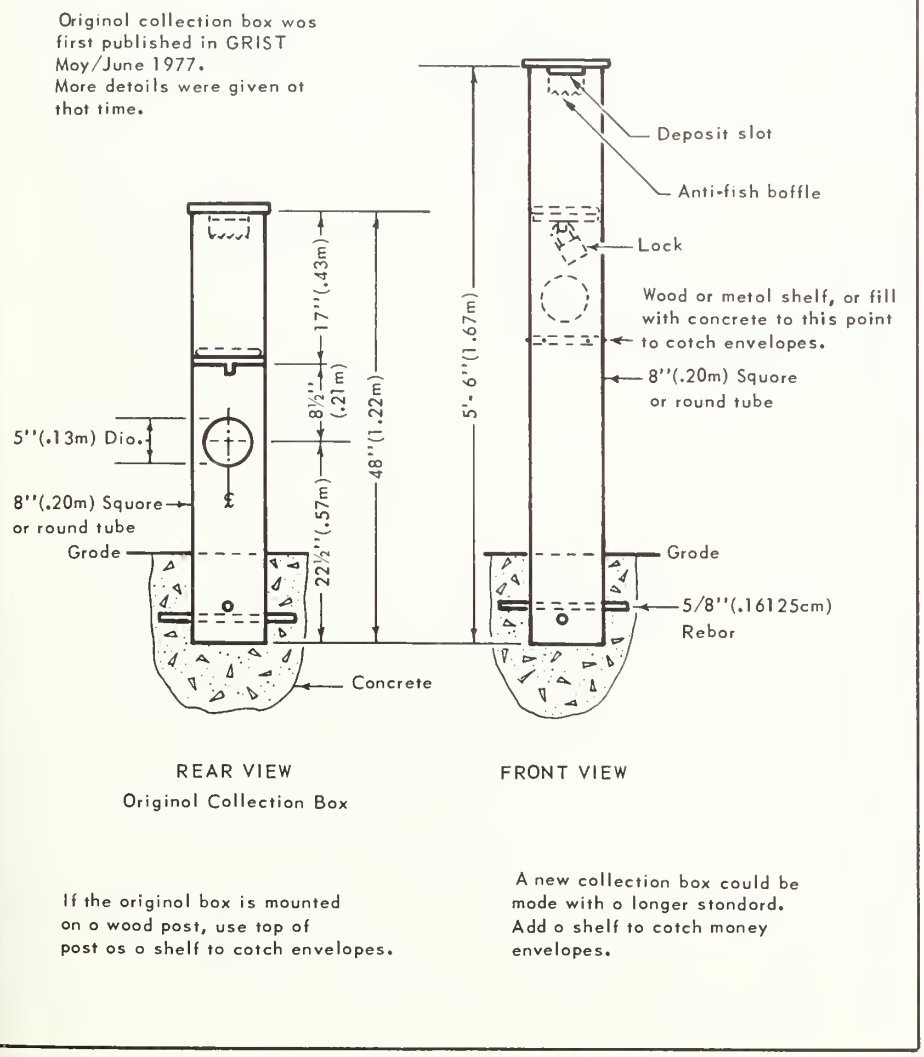
Ingenuity

Campground Pipe Safe

Park Technician Pamela V. Varner sent in a modification to the vandal resistant money collection box/pipe safe which was designed by Tony Skufca, Director of the Forest Service's Region 6 and which appeared in the May/Jun 1977 issue of *Grist*, Vol. 21, No. 3, p. 24.

Varner states the pipe safe stands only about 3½ feet tall which puts the lock and outlet for the envelopes just inches off the ground and makes it difficult to empty the pipe. She suggests mounting the safe on top of another 3' high post. This would make the lock more accessible. The additional post would have to be metal because a wood post could be sawed off easily and carted away.

Varner received a $25 National Park Service incentive award for her suggestion.



Special Notice

Your attention is called to the item "Pushbar Jam" appearing on page 45 of the Nov/Dec 1981 *Grist*. This shared suggestion, developed for the purpose of preventing unauthorized entry, violates the Life Support Code which the National Park Service has adopted as a consensus standard. Accordingly, such a device that prevents the release of the latch when pressure is applied to the pushbar should never be used. Similarly, the use of seals (see "Seal Security," page 44, same issue) would be violative if they operate to prevent the door from opening readily under panic conditions.

Although the use of such devices can technically be justified when there are no occupants in the building, the human factor of forgetfulness in removing them during periods of occupancy poses a danger to life so great as to offset any justification for employing them.

Our attention to this important matter was called by the National Park Service Regional Office in Seattle, Washington, with assurances that the Life Safety Code governs all NPS management decisions in the field of safety and accident prevention.

In the Sep/Oct 1981 *Grist*, Park Practice published an item captioned "Toilet Paper Dispenser" with a drawing, on page 37.

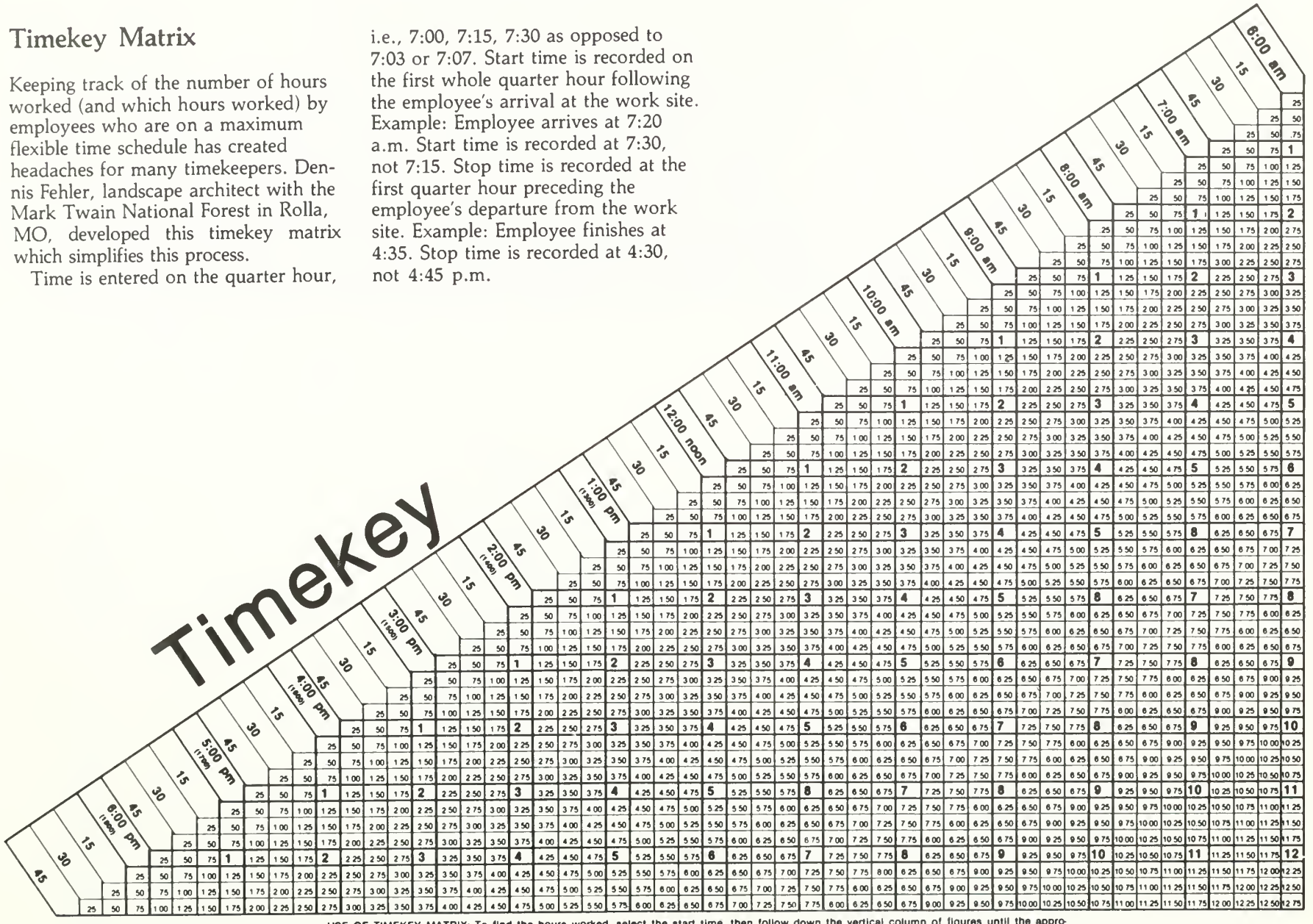
Grist first learned of this device from a Forest Service Equipment Development Center release. The Forest Service release, *Equip Tips*, referenced a source for the commercially-available product, and we included this information in the *Grist* article. The specification drawing on page 37 was done by the Editor of *Grist* entirely from photographs that appeared in the Forest Service release.

We have now learned that Mr. Harry Drum, Box 430, Ruthven, Iowa 51358 holds a pending patent on a device so similar as to be substantially identical with the one described in *Equip Tips* and *Grist*. Accordingly, we ask all readers and subscribers to be aware of Mr. Drum's claims in this matter.

Timekey Matrix

Keeping track of the number of hours worked (and which hours worked) by employees who are on a maximum flexible time schedule has created headaches for many timekeepers. Dennis Fehler, landscape architect with the Mark Twain National Forest in Rolla, MO, developed this timekey matrix which simplifies this process.

Time is entered on the quarter hour, i.e., 7:00, 7:15, 7:30 as opposed to 7:03 or 7:07. Start time is recorded on the first whole quarter hour following the employee's arrival at the work site. Example: Employee arrives at 7:20 a.m. Start time is recorded at 7:30, not 7:15. Stop time is recorded at the first quarter hour preceding the employee's departure from the work site. Example: Employee finishes at 4:35. Stop time is recorded at 4:30, not 4:45 p.m.



USE OF TIMEKEY MATRIX: To find the hours worked, select the start time, then follow down the vertical column of figures until the appropriate horizontal row (stop time) is found. This intersection indicates hours and hundreths of hours. (e.g. 2.75 = 2 hrs. & 45 mins. or 2¾ hrs.)

U.S. Department of the Interior
National Park Service and
National Recreation
and Park Association

GRIST

May/June 1982
Volume 26/Number 3

Serving Handicapped Visitors

Helping to provide safe and enjoyable experiences to handicapped persons at beaches is an important step in mainstreaming the disabled in our society. One method of providing these experiences is to train lifeguards in the supervision and rescue of handicapped swimmers.

Richard D. Baker, chief lifeguard at Assateague Island National Seashore (MD-VA) suggests establishing such a lifeguard training program and he refers us to the American Red Cross publication *Adapted Aquatics* as a training text.

Baker also recommends publicizing the lifeguard services and recreation program accessibility so that this information is available to all. He suggests publishing a brochure as part of Assateague Island's water safety recreation use program which highlights this information.

The brochure would state. . .

> "All lifeguards receive training in first aid, CPR, lifesaving and beach supervision. They are also trained to supervise mainstreamed handicapped visitors and to handle them in emergencies.
>
> "Groups with members who share characteristics that are special problems in aquatic recreation may want to use the protected beach and integrate their group with the general public. Group leaders should consult with a supervisory lifeguard concerning group characteristics such as non-swimmers, poor swimmers, or disabilities, before letting their group go into the water.

(continued on p. 19)

Safety

1957 PARK • PRACTICE • PROGRAM 1982
Twenty-Fifth Anniversary

Grist
A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

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The Park Practice Program includes: *Trends*, a quarterly publication on topics of special interest in park and recreation management and programming; *Grist*, a bimonthly publication on practical solutions to everyday problems in park and recreation operations; and *Design*, a quarterly compendium of plans for park and recreation structures which demonstrates quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and selected back issues in vinyl binders with indices and all publications for the calendar year.

The initial membership fee is $80; annual renewal is $20. A separate subscription to *Grist* is $15 initially, and $7.50 upon renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

Increasing Vehicle Visibility

Making vehicles more visible at night is an effective method of reducing accidents and injuries.

Park Ranger Dale Edward Silvis of Cuyahoga Valley National Recreation Area (OH) suggests using Scotchguard or other brand of reflectorized tape to improve and increase visibility of government-owned vehicles during night-time operation.

The tape can be applied to the exterior of all park vehicles and can also be applied to the inside of doors, the inside of the trunks of automobiles, and the underside of vehicle hoods. Silvis states that the reflectorized tape even enhances law enforcement vehicles which are already equipped with light bars and other safety equipment. The tape is of particular use when retrieving equipment from car trunks at night and when vehicle operators are in public contact on the side of the road.

Reflectorized tape can be purchased in many colors to match the color of the vehicles and can be applied in strips to achieve maximum effect and visibility.

Silvis was presented a $200 National Park Service incentive award for his suggestion.

Stairway Safety

Doyal Glenn Jackson, maintenance work leader at the Ozark National Scenic Riverways (MO) came up with this idea to make the lumber stairway tread surface within the Maintenance Shop safer to walk upon.

Jackson suggests warming clean, sharp sand and applying it to freshly painted stairway, while the paint is still wet. After this is dry, apply a second coat of paint over the sand and allow to dry.

This sand and paint mixture prevents slipping where there are up-down tread surfaces and when the surface is wet (except during periods of ice and snow cover).

A $100 National Park Service incentive award was presented to Jackson for his suggestion.

Shower Facilities

Maintenance employees are often exposed to unsanitary conditions, contaminants and substances such as gasoline, acids and chemicals which could cause serious problems if not washed off within a reasonable period of time.

Sharon Fletcher, supply clerk at Cumberland Gap National Historical Park (KY, VA, TN) recommended th installation of shower facilities at th maintenance department for emergency hazardous type situations and as preventive measure against disease.

Fletcher was presented a $50 National Park Service incentive award for her suggestion.

Visitors Considered

Fee Booth Sign

Park Technician Gordon Wilson suggested posting additional information at the entrance station's fee booth at Castillo de San Marcos National Monument (FL) that would be most welcome to senior citizens.

U.S. Senior Citizens
FREE ADMISSION
Pass Available Here

An existing sign stated that children under 16 years of age were admitted free of charge. Wilson's suggestion furnished the additional information that U.S. residents who are 62 years or older are entitled to free admission if they possess a Golden Age Passport, and that passports are available at the entrance station.

A $25 National Park Service incentive award was presented to Wilson for his suggestion.

Handicapped...(continued from p. 17)

"A ramp goes from the handicapped parking area at the north end of the main parking lot to the beach just north of the lifeguard-supervised beach. Disabled visitors may need assistance to move into the protected area."

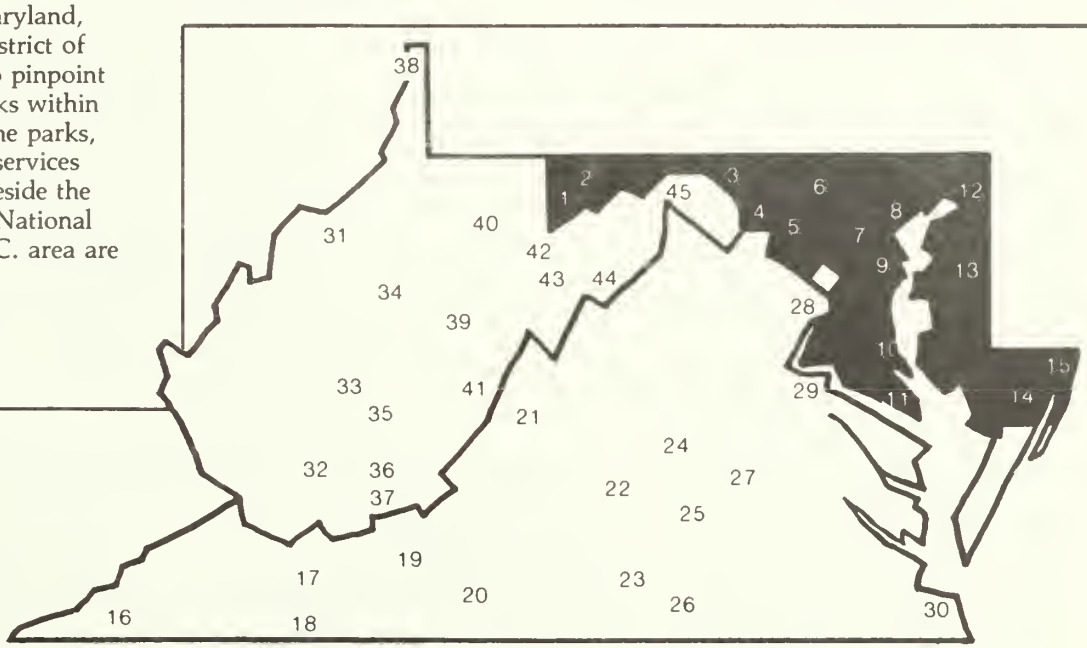
Baker feels that public service will be improved through increasing program accessibility. Expanded lifeguard training will prevent accidents and result in more emergency service for all visitors. Also, the existence of the Red Cross text, *Adapted Aquatics*, makes it possible for any organization to immediately incorporate knowledge about handicapped swimming into its training program.

Baker was presented a $50 National Park Service incentive award for his suggestion.

Parks in the C&P Area

Information about your local park area is close at hand. Jackie Clinton, secretary in the National Park Service's Division of Natural Science shares this page from a 1980 Northern Virginia Chesapeake & Potomac telephone directory (Washington, DC metropolitan area).

A map of Virginia, Maryland, West Virginia and the District of Columbia is numbered to pinpoint locations of the state parks within the area. The names of the parks, telephone numbers, and services available are described beside the corresponding numbers. National park areas within the D.C. area are also listed.



Parks in the C&P Area

District of Columbia

Dial-A-Park **202/426-6975**. Information **202/426-6700**.

Anacostia Park: swimming pool sports facilities

Kenilworth Aquatic Gardens features waterlilies, lotuses **202/426-6905**.

U.S. National Arboretum: ornamental trees, shrubs floral displays Trails include Touch and See Nature Trail, designed for both blind and sighted persons **202/339-5400**.

East Potomac Park: swimming pool picnicking miniature golf, two golf courses driving range, club house **202/554-9813**.

Fort Dupont Park: picnic, [illegible] golf [illegible] sum-

West Potomac Park: ballfields, fish, ice skate, swan boat Pedalboats rowboats, canoes for hire

Maryland

Park Service **301/269-3761 & 3771**

Camping and Special Activities **301/768-0895**

1. Herrington Manor State Park: cabins, hike, bike picnic, fish swim winter sports, boat rental, ramp **301/334-9180**

2. Deep Creek Lake State Park: camp, picnic hike fish swim and boat ramp **301/387-5563**.

3. Fort Frederick State Park, on C&O Canal restored frontier fort, mu-

8. Gunpowder Falls State Park: camp, picnic, fish, boat ramp, horseback riding hike and bike **301/592-2897**

9. Sandy Point State Park: picnic hike, fish crab swim boat rental and ramp **301/757-1841**

10. Calvert Cliffs State Park: camp picnic hike and fish **301/888-1622**

11. Point Lookout State Park: monument to Confederate prisoners of war camp, picnic swim, fish hike and boat launch **301/872-5688**

12. Elk Neck State Park: campsites cabins, picnic hike swim fish and boat ramp **301/287-5333**

13. Martinak State Park: cam[illegible] fish and b[illegible]

18. Grayson Highlands State Park, camp, hike picnic visitor center **703/579-7092**

19. Claytor Lake State Park: cabins campground horseback riding hike picnic, swim, water ski fish boat rental and ramp visitor center **703/674-5492**

20. Fairy Stone State Park, named for cross-shaped rocks in area camp cabins horseback riding hike bike picnic, swim, fish boat rental and ramp visitor center **703/930-2424**

21. Douthat State Park: cabins lodge, campsites visitor center picnic, hike fish swim boat rental and ramp on lake **703/862-0612**

22. Holliday Lake State Park campsi[illegible] bike picnic

35. Babcock State Park: New River Canyon, operating gristmill campsites cabins picnic, swimming pool gamecourts hike, fish and boat rental

36. Bluestone State Park: cabins campground, picnic, hike swimming pool gamecourts fish boat rentals and launch

37. Pipestem State Park: aerial tramway to Bluestone River complex, cabins lodge campsites, golf course swimming pool gamecourts, horseback riding hike picnic fishing

38. Tomlinson Run State Park: fish hike picnic swimming pool, gamecourts and boat rental

39. Holly River State Park: cabins, campground, game-

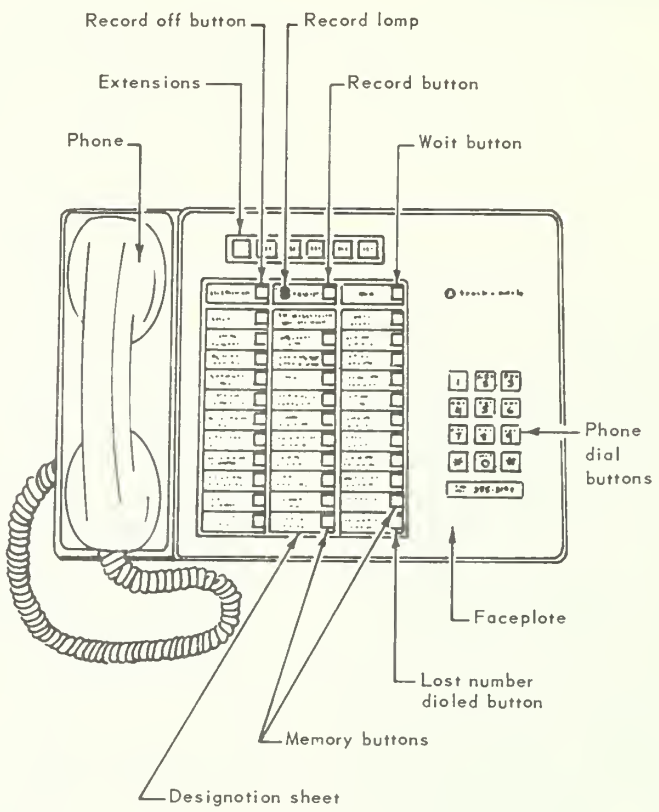
Library Resource

Have you ever read an interesting and pertinent article, only later to forget where you read it, or misplaced the magazine in which it appeared? Wayne L. Bell, clerk at the Blue Ridge Parkway (NC-VA), solved this problem by suggesting that articles of significance to the Parkway be indexed and entered into the Interpretive Library card catalogue.

All incoming magazines are reviewed by the Park Historian and Chief of Interpretation, and significant articles are marked on the contents page. The Interpretive Clerk indexes the designated articles, keeping both the index card and magazine in the Interpretive Office for two weeks. They are then forwarded to the South District Office for filing.

Bell also donated all newspaper clippings to the Pack-Memorial Library reference section. Clippings are usually filed and later destroyed when no longer needed or after a 3-year period. Providing the library with research material would greatly increase the library's existing shelf file of newspaper clippings and would provide additional material to the numerous historians, writers, students, etc., interested in North Carolina and local history. Both of these ideas also help free up storage space and make better use of library resources.

Bell received a $50 National Park Service incentive award for each of these two suggestions.



SPECIAL FEATURES

Emergency Dispatching for Patrol Rangers

Patrol ranger requests for information and assistance require immediate response by the radio dispatchers in park headquarters. Dispatchers must have ready access to a myriad of telephone numbers. At Richmond National Battlefield Park and Maggie L. Walker National Historic Site (VA) which consist of 12 widely separated units in three Virginia counties and the City of Richmond, the dispatcher must deal with five separate local and state jurisdictions as well as the state motor vehicle computer which itself requires three different phone numbers and two access codes.

Chief Park Ranger Charles D. Rafkind recommended installing a Western Electric Touch-a-matic 31 phone in the ranger/dispatching office at Richmond park headquarters. This phone allows one button dialing, and up to 31 different police, fire, rescue, motor vehicle, park and service phone numbers are automatically programmed into the phone. Listings are made alphabetically by type of service, and emergency phone numbers are further identified by a red mark. Computer access codes are listed next to the appropriate phone listing.

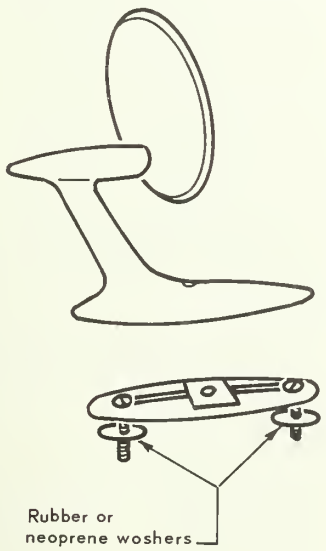
This new telephone system has greatly increased response time and efficiency within the parks and insures almost 100% accuracy. The phone is fully compatible with multi-line systems including intercom and has rotary dial or push button operation. Additional cost is less than $15.00 per month.

Rafkind received a $75 National Park Service incentive award for this suggestion.

DIRECTORY SHEET

RECORD OFF	RECORD	WAIT
CHESTERFIELD Police COMMUNICATION	For listructions lift face plate	Rodio Comm. of Virginio
CHESTERFIELD Fire/Rescue COMMUNICATION	DMV - Nights, weekends, holidoys	CHESTERFIELD Police routing
#1 HANOVER P/F/R COMMUNICATION	Moggie Wolker House	HANOVER CO. Offices & Sheriff
#2 HANOVER P/F/R COMMUNICATION	Ft. Horrison V.C./Moint.	HENRICO CO. Police
HENRICO P/F/R EMERGENCY COMMUNICATION	Cold Horbor VC Wott House Garoge	RICHMOND Police routine
HENRICO P/F/R NON-emergency Ask for Comm.	F B I	STATE POLICE Admin. HQ's
RICHMOND P/F/R EMERGENCY COMMUNICATION	U.S. Attorney	Moggie Wolker Storoge
RICHMOND P/F/R NON-emergency COMMUNICATION	U.S Mogistrote	
STATE POLICE Division #1	Dictogroph Alorm FALSE ALARMS TESTING	
DMV 10-27	Dictogroph Alorm Co. SERVICE	TIME/ TEMPERATURE
DMV 10-28	FTS OPERATOR Commerciol #	LAST NUMBER DIALED

Rust Prevention



The Junior West Coast rear-view mirrors that come on pick-up trucks and vans are attached directly to the truck or van door, with no spacer or washer between the mirror frame and door. Water, salt air and vibration create electrolysis which causes the door to rust.

Rodney M. Stilwell, maintenance worker at Canaveral National Seashore (FL) suggests installing rubber or neoprene washers between the mirror frame and door so the two metals do not touch. This would prevent the door from rusting and would add to the preservation of the vehicle.

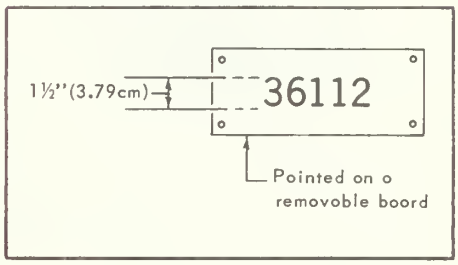
A $25 National Park Service incentive award was presented to Stilwell for his suggestion.

Building Inventory Numbers

The Parks Division of the Arkansas Department of Parks and Tourism developed this building inventory numbering system for its facilities.

The numbers are 1½" letters on a removable, rectangular board and are placed in areas not easily noticed by the public. The numbers are furnished by the Department's inventory control section, and placement is established by the park superintendent or the regional supervisor.

This building inventory numbering system is part of the *Arkansas State Park Design Standards*, issued by Richard W. Davies, Director of State Parks in Arkansas.



Emergency Repair to Water System

Bryan Rowder from Idaho's Farragut State Park shares his suggestion for emergency repair for a water system. When the diaphragm on a Cla-valve (check valve) breaks because of excessive pressure or wearing out, apply nylon reinforced tire tube patches on the break, the same way you would if patching a tire. The stronger the patch, the better. Rowder says that a "Hot Patch" kit will also work.

This emergency repair may prevent your park facilities from being closed for several days, while a replacement part is located, delivered and installed. This would mean a savings to the park staff in complaints, possible vandalism because of closed restrooms, and saves the park visitor the disappointment of finding the park or recreation area closed.

Porcupine-resistant Sign

Having problems with porcupines? A porcupine-resistant sign is now available from Ojo Caliente Craftsmen, Inc., P.O. Box 67, Ojo Caliente, NM 87549.

The signpost is made of ¾," seven-ply porcupine-resistant plywood, with a brown high density overlay (HDO).

The U.S. Forest Service's Missoula Equipment Development Center researched and developed porcupine-resistant signs in the early 1970s, and the signs were made available in 1975. The availability of these signs was announced in the U.S. Forest Service's December 1980, *Equip Tips*.

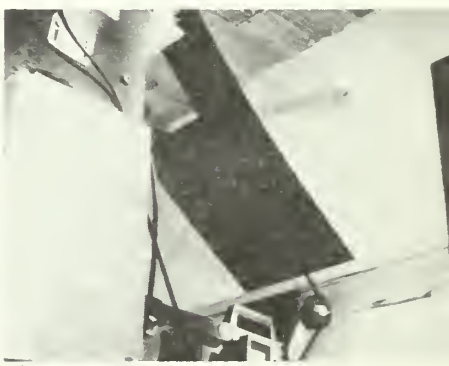
Protecting Interpretive Equipment

Many park personnel use 16mm movies in their interpretation programs. As much as 6 feet of film is exposed to airborne dust particles which can damage both the film and projector.

Gerald W. Sanders, park technician at Lincoln Boyhood National Memorial (IN) made a dust cover to place over the projector and exposed film. The dust cover is an 18"x30" piece of colored plastic-glass and was made from scrap material. The dust cover has kept the film and projector relatively dust-free and has reduced the amount of time spent in cleaning the film and projector from a daily to a weekly basis.

An $81 National Park Service incentive award was presented to Sanders for his idea.

Before



After

Sawbuck for Chain Saw Wood-Cutting

When a wood burning stove was purchased for the maintenance shop at Agate Fossil Beds National Monument (NE), a device was needed to hold lumber while cutting it with a chain saw. This device would have to make certain the lumber was held secure and would allow only one person to do the entire operation.

Maintenance worker James D. Hanson constructed this sawbuck that has four cross supports instead of the standard two or three. The two middle crosses are approximately 10" apart and the diagonal cross braces are on both sides to eliminate movement lengthways.

Two pieces of plywood are nailed on the inside of all the crosses where the lumber will lay. Both pieces of plywood have a slot of about 2" wide cut in between the two middle crosses. This allows both long pieces of wood to be cut and also the short pieces which are normally hard to hold and saw by one person. Using this type of sawbuck, the short piece can be laid across the 2" slot and the chain can be run down through the slot while both ends of the wood are supported.

The sawbuck can be constructed from old wood and posts. It allows one person to cut wood with a chain saw, instead of two, and provides a safer means for the chain saw operator.

Hanson received a $250 National Park Service incentive award for developing this idea.

Recycling

Recycled "Honey Wagon"

Park Technician Stephen M. Young came up with an idea to make good use of a surplus tank and trailer at Big Bend National Park (TX). He suggested converting the vehicle, once used to haul hot oil, into a "honey wagon" for pumping toilets.

Adding an additional "honey wagon" to the park meant that the pit toilets at Rio Grande Village and Castolon could be pumped on a regular basis and would prevent pit toilets from being closed because they were full. It would also save time and expense for costly fuel traveling between the two areas.

The conversion would require only minor alterations and a change of the hitch from a military to a ball type.

Young received a $45 National Park Service incentive award for his suggestion.

Lumber Rack

Storing unused lumber from new building construction at Fort Scott National Historic Site (KS) was a problem until maintenance worker Harley T. Goff built this lumber rack.

He used eight 8"x10" timbers for the rack legs and spaced the legs 5' apart for an overall length of 15'. Holes were cut to insert 4"x4"x8' beams to form three 2' wide rack sections. The legs were notched at the bottom shelf level for 2"x4"x60" braces which will support one or more solid shelves for short lengths of lumber.

Goff used timber and lumber left over from the restoration of historic structures at the site. He estimates labor costs at $103. A comparable lumber rack, if purchased, would run approximately $747.

Recycling Aluminum Cans

Steven W. Chapin, park planner at Blue Ridge Parkway (NC-VA), recommended placing a plastic garbage container in the canteen area to collect empty soft drink cans. The cans are rinsed out before placing in the bag to prevent bugs from gathering. Twice a month the cans are taken to the local recycling center. Money received from the recycled cans is donated to the Employee Benevolent Fund.

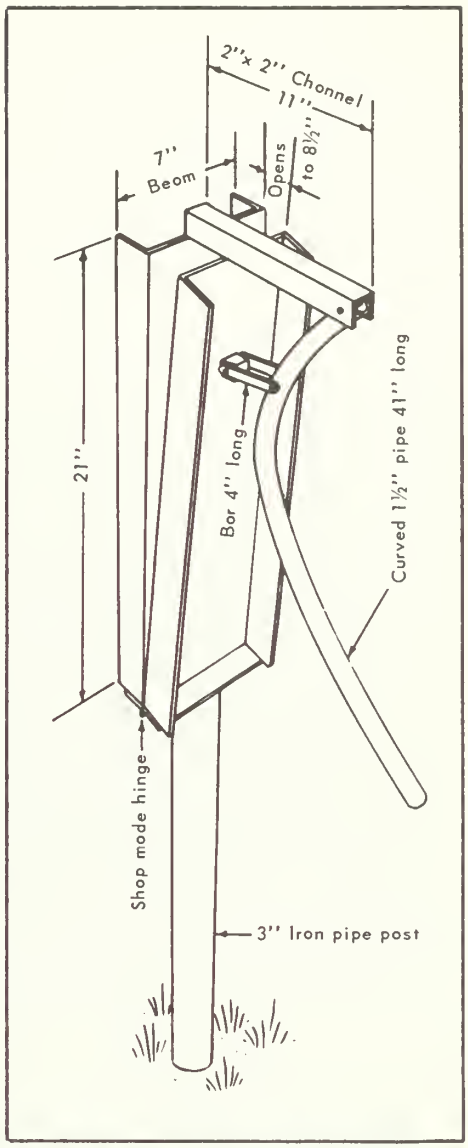
Chapin's suggestion encourages the participation in recycling programs to conserve valuable natural resources, eliminates a potential litter problem, and supports a worthy cause.

A $25 National Park Service incentive award was presented to Chapin for his suggestion.

Can Smasher

This can smasher article was recycled from an earlier *Grist* issue. First appearing in the Nov/Dec 1962, Vol. 6, No. 6 issue of *Grist*, it may be more useful today than ever!

Designed by Milford M. Cook, a painter with Sequoia-Kings Canyon National Parks in 1962, the can smasher will crush practically any can, from the smallest on up to the gallon size.



Woodworking Bench

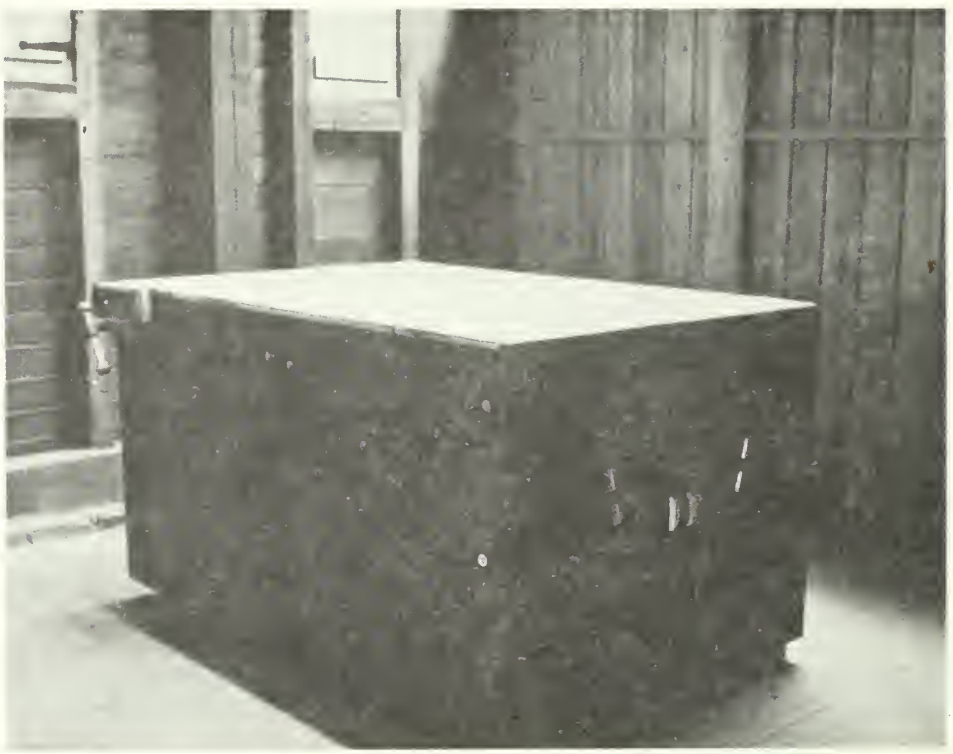
Michael B. Younggren, maintenance laborer at Fort Scott National Historic Site (KS) shares this woodworking bench with *Grist* readers. Using two old display cases, Younggren suggests removing the glass, wiring and sloping top shelf, and sliding two cases together facing one another. Fasten the bottom of the cases together with two 2″x4″s on the existing stand. Fasten the tops together with two 1″x4″x4′ oak boards which will also support both ends of the top. Use 1″x3″s inside at both ends of the bench as cleats for the second shelf, and run a 1″x1″ along the existing sloped shelf ½″ down.

Connect the two sloped shelves together with a 2′x6′ piece of ½″ plywood. Then nail ¾″ oak flooring on top. Add sliding doors on each side that can be locked. This gives an 8″x6′x4′ shelf with an entrance from both sides.

Place a wood vise on one corner of the bench. Then put a tapered door on the end to gain access to storage area between the two cases. Shelves on one side have storage spaces of 12″x12″x6′, 6″x18″x6′, and 7″x22″x6′ and the other side 8″x12″x31″ and 18″x22″x36″. Open area in between cases is 27″x22″x36″. This bench provides the Maintenance Shop with 24 square feet of working area, a functional wood vise, and 72 square feet of locked storage space.

Materials used for the bench were left over from the construction of buildings on the site. Younggren estimates a $780 savings to the National Park Service.

A $78 National Park Service incentive award was presented to Younggren for his suggestion.



Saving Fuel in Maintenance Building

Gene Baldock, B&U maintenance and operations foreman at Grand Teton National Park has suggested a method for saving costly fuel oil.

The shop floors are heated with an underfloor hot water system that must be turned on at the first sign of freezing in the Fall. It takes approximately 8 hours for the concrete to heat or cool and the temperature can reach as high as 90°F. Since the temperature is controlled by an outside thermostat, this method was impractical. Also, some of the pipes are near the door aprons and they easily freeze. This condition exists for some 6 weeks in the Fall and approximately 6 weeks in the Spring.

Baldock suggested draining the entire system, installing a 50-gallon container with an injector pump and installing ethylene-glycol in the pipes. As evaporation takes place, additional amounts of fluid can be injected as needed. This would allow the system to lay dormant for approximately 3 months a year without danger of freezing.

While the system is dormant, the overhead heating system can be used which is more receptive to the necessary temperatures. When outside temperatures do reach extremely low levels, the underfloor systems can be turned on. He estimates that a 20% reduction in the fuel bill can be realized.

A $130 National Park Service incentive award was presented to Baldock for his suggestion.

National Park Service
U.S. Department of the Interior
and
National Recreation
and Park Association

GRIST

July/August 1982
Volume 26/Number 4

Better Turf Management Through Reduction of Cost for Sod

by David Frioud
Division Director of Parks
City of Dunedin, Florida

In June of 1981, the City of Dunedin Parks Division began an experiment which has resulted in considerable monetary savings, and improved aesthetics of the park areas.

The parks' budget, especially for grounds maintenance, had undergone severe cuts during the previous year's budget preparations. Further, in April of 1981, the CETA subsidization funds were cut and the grounds maintenance staff was reduced from ten full-time employees to six. However, the budget cuts were only part of the problem faced by the grounds maintenance section of the Parks Division.

We have three athletic complexes, comprised of twelve fields, which are maintained at a professional level. One of these athletic complexes was constructed in 1977 and, because of improper construction techniques, the soil conditions were very poor. Due to the cost of sod, this three major league baseball complex was seeded with hybrid Bermuda. The poor soil conditions, along with an inadequate irrigation system, caused very little of the seed to germinate, resulting in poor turf conditions. Overseeding had not been done after the initial seed application which compounded the problem and created twenty-one acres of terrible athletic turf conditions.

This challenge caused us to list alternatives which could restore these fields, and provide for adequate maintenance for the remaining athletic fields.

(continued on p. 27)

Sod squares as they are being placed on a Little League infield. Sod is laid during the day and play is accommodated during the evening of same day.

Comparison between native Bermuda on right and coarse Bahia on left.

1957 PARK • PRACTICE • PROGRAM 1982
Twenty-Fifth Anniversary

Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

Russell E. Dickenson, Director
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The Park Practice Program includes: *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a bimonthly publication on practical solutions to everyday problems in park and recreation operations including energy conservation, cost reduction, safety, maintenance, and designs for small structures; *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and a library of back issues arranged in binders with indices, and all publications for the remainder of the calendar year.

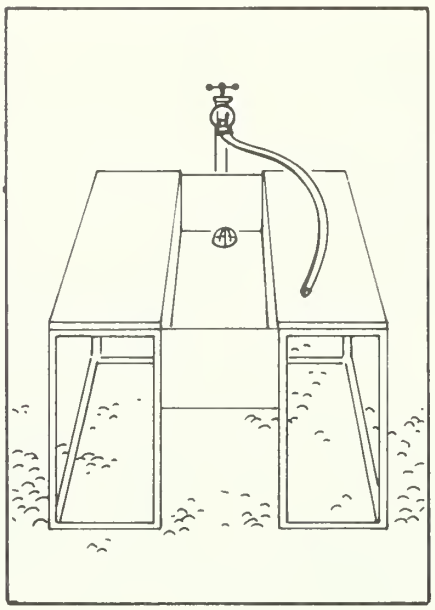
The initial membership fee is $80; annual renewal is $20. A separate subscription to *Trends* is $15 initially, and $7.50 on renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, DC 20240.

FOR SAFETY'S SAKE

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance wiht national, state and local safety codes.



Fish Cleaning Station Hose

Perry R. Crowley, park ranger at the U.S. Army Corps of Engineers at Stanislaus River Parks (CA), has developed this fish cleaning station hose to help clean up fish entrails and scales that litter the cleaning surface.

Using a short piece of discarded garden hose and a clincher coupling, attach an extension to the end of the faucet. Approximate cost for the hose clincher coupling is $.50.

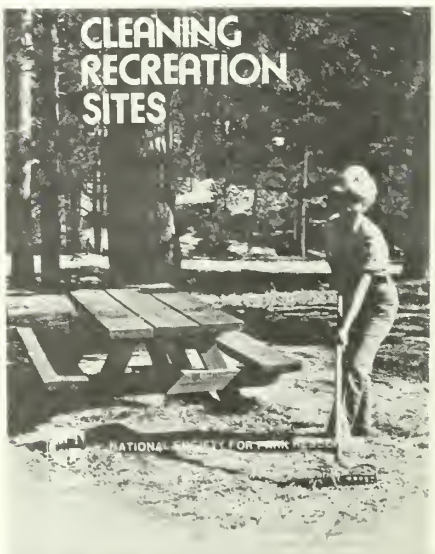
The hose would aid fishermen in cleaning fish and washing off the metal surfaces of the fish cleaning station, and would reduce maintenance for cleaning the fish station by one-half.

Cleaning Recreation Sites

A new publication is available that offers guidelines for keeping recreation sites clean, safe and sanitary for visitors and employees alike. *Cleaning Recreation Sites* helps recreation maintenance personnel to better organize their tools, equipment, supplies and procedures, and provides recreation site designers with information to satisfy aspects of site development, construction and use.

The publication is well illustrated and offers a step-by-step process of recreation site cleanup, such as cleaning and policing standards, disposing of chemicals, cleaning vault, flush and chemical recirculating toilets, tables, signs, and garbage cans, and a host of other essential topics.

Cleaning Recreation Sites was developed by the USDA Forest Service in 1980 for the guidance of its employees, contractors and its cooperating Federal and State agencies. The National Society for Park Resources, a professional branch of the National Recreation and Park Association, cooperated with the Forest Service in reprinting, promoting and distributing the publication through NRPA headquarters in Alexandria, VA. Copies of *Cleaning Recreation Sites* may be obtained by contacting the National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.



Better Turf Management . . .

(continued from p. 25)

In May of 1981, we began to investigate the possibilities of using native Bermuda sod for athletic turf. We learned that the city's pollution control plant had been dumping approximately one million gallons of liquid sludge per day on approximately twenty acres of orange grove. The areas where the sludge had been dumped were so prolific with native Bermuda sod that weeds had been crowded out and a veritable carpet of Bermuda sod had been formed.

After reviewing several alternatives which were not financially feasible, we began to take native Bermuda sod and place it in sparse areas at one of our ball fields. Two months later our experiment proved successful.

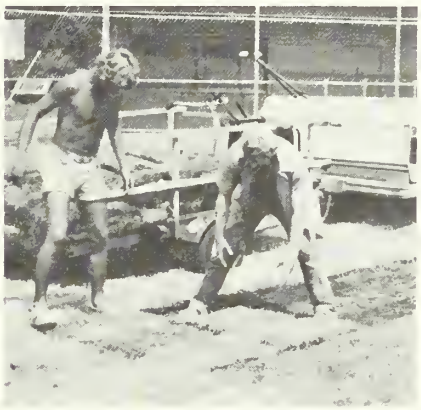
Since June of 1981, we have laid over 90,000 square feet of sod at various athletic fields. This sod program does not create additional expenses to the operating budget, and we are providing excellent field conditions. The sod has become well established in many areas of our athletic fields.

This Bermuda sod (genus—Cyndon, species—Dactylon) is originally from Africa and has flourished very well in Florida. Apparently, it is resistant to mole crickets, sod webworms, funguses, and diseases. Another pleasing aspect of this grass is that it seeds throughout the months of May through September. Each stalk has hundreds of seeds so the propagation characteristic of this grass is ideal.

The basic difference between native Bermuda and hybrid Bermudas such as Tifway, is that native Bermuda stalks considerably more and also "browns out" earlier in the winter. The blades of the native Bermuda are also somewhat wider and longer, and the color is of a slightly lighter shade than many of the Bermudas such as Tifway.

Maintaining this grass is ideal. Between May and October, the reel mower is set at 1¼ inches. During the dormant months, we set the reels at 1½ inches. We fertilize the grass twice per year with an organic 6-6-6 and trace element fertilizer. We usually fertilize in the last week of February and the middle of September. Since the grass browns out earlier than most Bermuda grasses, we overseed with winter rye for the winter months to accommodate play. We apply mole cricket bait only on those fields which have a very high concentration of these pests.

As part of the maintenance process, we also have sludge trucks from the pollution control plant dump liquid sludge on our ball fields. The sludge trucks apply one application of liquid sludge on the fields on a Monday-Wednesday-Friday basis for approximately one month. It is also important to note that the pH of the



sludge is 5.7. This means that the sludge has a slightly low pH rating for most of the Bahia and St. Augustine grasses. However, we have found that a pH of 5.7 is appropriate for the native Bermuda.

From the time you begin to dump sludge in an area to the time you can begin cutting sod is approximately two years. Since the sod experiments have proven successful, we have established a sludge application schedule for all of our athletic fields. The results from the sludging of the fields have been outstanding.

After the truck has finished dumping the sludge, we begin rolling with a heavy roller to eliminate any ruts or high spots on the fields created by the sludge trucks.

Future plans for this program are to continue with the same maintenance outline. We are so encouraged with the grass and what it has done and what it will enable us to do in our turf maintenance, that we are looking for additional areas where we can continue dumping the sludge and form a sod farm. We anticipate laying another 140,000 square feet of sod this year. If conditions to support our program and turf conditions continue to improve, we plan to totally convert all of our athletic fields to native Bermuda sod by September of 1983.

The costs of turf management are continually escalating. Most cities are facing great difficulties in providing adequate turf maintenance when budgets are continually being reduced. Such was the challenge which faced the City of Dunedin during the spring of 1981. Since adopting our new sod program, we have been able to greatly increase the aesthetic appearance of many athletic fields and park areas without incorporating the high cost of sod. This grass has tremendous maintenance appeal and could be of great service to other cities in Florida.

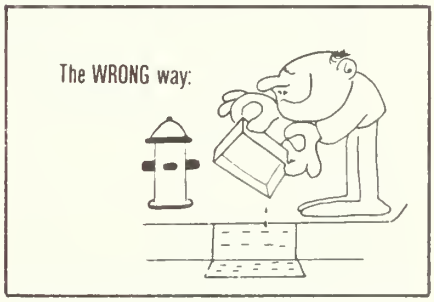
Used Motor Oil

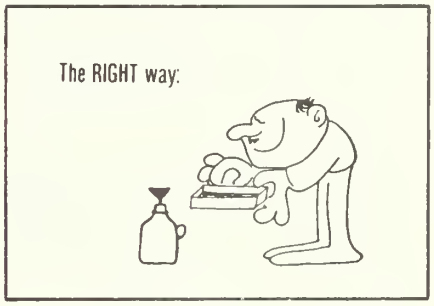
Disposal of used oil (in your back yard, down storm sewers, in the alley, in the garbage, etc.) is a messy proposition. It doesn't have to be that way.

The District of Columbia's Energy Office tells us how we can contribute to an energy conservation program by having this oil recycled.

1. Drain your oil into a suitable container.

2. Transfer into a clean, unbreakable container with a tight-fitting screw cap. For example: a one-gallon plastic milk jug or can.
(CAUTION: Do not mix the recovered oil with other liquids.)

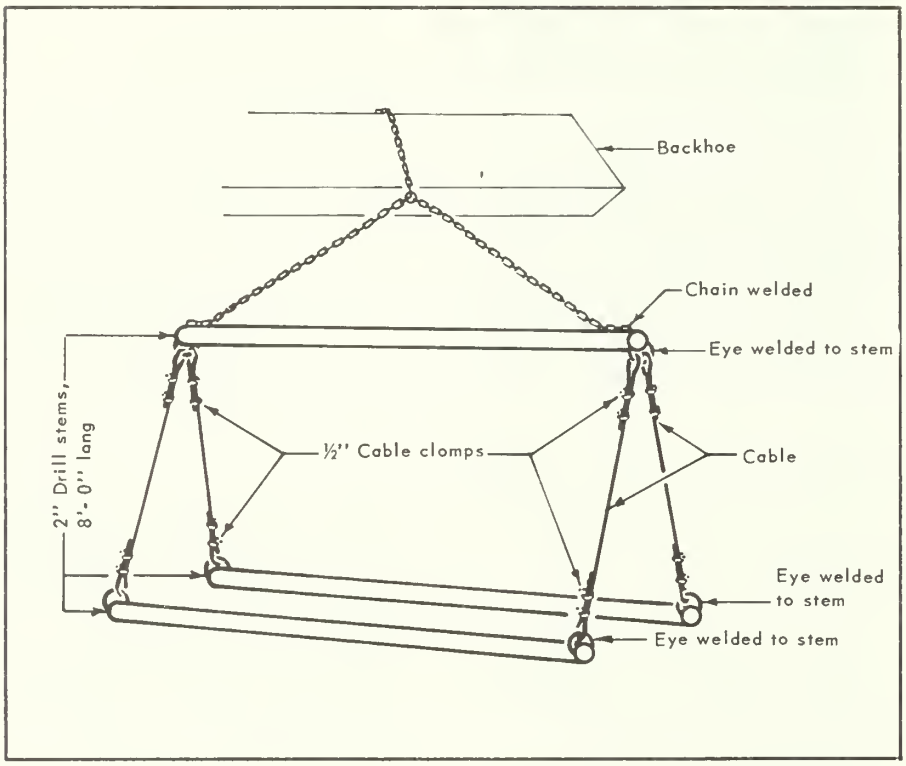




3. Bring the oil to your local participating service station where it will be picked up by a used oil collector and recycled at no cost to you. For further information call the DC Energy Hotline on 724-2100.

Picnic Table Lifter

In the process of rehabilitating recreation areas it is often necessary to relocate, re-adjust, and level the concrete picnic tables that exist in the campground. In order to simplify the task of lifting the approximately 1700-pound tables, Maintenance Worker Billy Givins with the U.S. Army Corps of Engineers at Lake Greeson (AR), designed the following device that can be affixed to a backhoe bucket and lifts the tables with the aid of only one backhoe operator and a person on the ground.



Materials needed for the device are: (a) 3 lengths of 2″ drill stem 8′ long, (b) 4 lengths of ½″ cable 4′6″ long, (c) 16-½″ cable clamps, (d) 2 chain hooks, (e) chain to fasten rig to backhoe and safety chains to loop over drill stems and around bench supports.

The cables are looped through welded eyes on the drill stem to make a triangular-like configuration. The peak of the triangle is affixed to the backhoe by the 8′ chain that is welded to each end of the top piece of drill stem.

The lower section of drill stem fits under the supports of the table top with safety chains looped over the drill stem and around the bench supports. After the device is attached to the table, it is a simple matter to lift the table and place it in position.

This system saves time in moving tables in that it takes only five minutes to hook up. Previous makeshift methods took about 45 minutes to rig up. The device also does no damage to the picnic tables and provides an element of safety that is often non-existent in makeshift methods. In addition, the device saves man hours because it only takes an operator and one person on the ground to operate instead of a group of workers to move tables.

Hand Tool Safety Strap

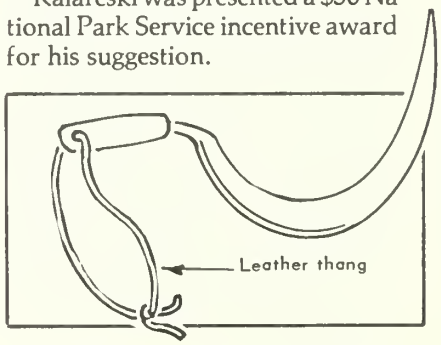
A hand tool that is used in a thrusting motion such as a sharp sickle can easily slip from the user's grasp, causing severe injury to the user, a coworker, or a bystander. Accidents such as these sometimes occur when the worker's hands are wet (often from perspiration) or gloved (as on cold days).

Park Technician Michael T. Kilareski of Hopewell Village NHS (PA) suggests equipping tools with a safety strap to keep them in the user's hand.

A ¼″ hole should be bored through the tool handle. Insert a leather thong or cord 20–25″ long through the hole and tie at the ends forming a circle. The user inserts his or her hand through the circle, twists the tool to take up the slack, then grasps the handle. Thus, if the worker loses his or her grasp on the handle, it will not fly about dangerously.

This safety strap reduces injuries to workers and bystanders and enables the tool to be stored hanging by the strap loop which will minimize rusting of seasonally-used items and reduce cleaning time.

Kalareski was presented a $50 National Park Service incentive award for his suggestion.



Visual Records

Supervisory Park Ranger Edward E. Lacy of Natchez Trace Parkway (MS-TN-AL) suggests taking close-up photographs of all interpretive exhibit panels and maintaining a record of these. This visual record can be used by field personnel in identifying any panels should they be stolen, and it will help in making a case incident report of the theft more accurate and timely. The visual record would also assist in restoration of the panels.

Lacy received a $25 National Park Service incentive award for his suggestion.

Roadside Cleanup

Collecting trash along the Natchez Trace Parkway (MS-TN-AL) was time-consuming, costly, and often dangerous. The pickup vehicle driver would pull off to the right-hand side of the road, leave the motor idling while he or she stepped out of the vehicle into the traffic lane, and walked around the vehicle to pick up the litter on the right side of the road. Or, the driver often had to cross the road when the trash was on the left side of the road.

Because of the efforts of Facility Manager Otis E. Robertson, right-hand drive kits were installed on several of the cleanup vehicles in the Natchez Trace Parkway for approximately $500 per vehicle. These kits permit the operator to have complete control of the vehicle while sitting on the right side of the vehicle with the original steering wheel and other controls remaining intact. The kits can be removed and fitted on other vehicles, when necessary, within a few hours.

Since Robertson's suggestion was implemented, the cleanup vehicle driver works only on the right side of the road going out and coming back, and has a much better view of the work area resulting in improved efficiency. The driver never alights from the vehicle to cross the road in fast traffic which is a significant safety improvement. For trash pick-up on the right hand side of the road, the driver is able to pick up fifty percent of the trash without getting out of the vehicle, thus reducing motor idling and precious fuel waste.

Robertson estimates 1,000 hours of employee time (approximately $7,500) and approximately 1,000 gallons of gas are saved each year.

A $75 National Park Service incentive award was presented to Robertson for his suggestion.

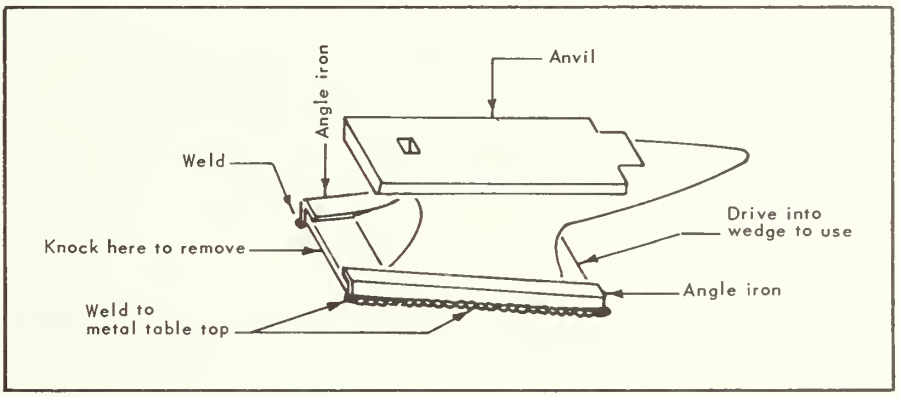
Removable Anvil Mount

Dale Miley, maintenance worker at George Rogers Clark NHP (IN) has devised this removable anvil mount.

Form a dovetail-like mount welded to the table top to hold the anvil tight. Form-fit a piece of angle iron to the curved base at each of the long side of the anvil. Weld the angle iron strips to a corner area of the table top. The anvil will now fit inside these tracts so it can be used without moving. When it is necessary to remove the anvil from the table, the anvil can be driven out of this dovetailed holding base.

Miley's device provides a firm and secure mounting for a 100-lb anvil so that the anvil cannot fall from the table and cause serious foot injury or floor damage. The mount saves space in the Maintenance Shop that a separate anvil mount would occupy, and it also makes it possible to use the full top area of the metal table when the anvil would be in the way.

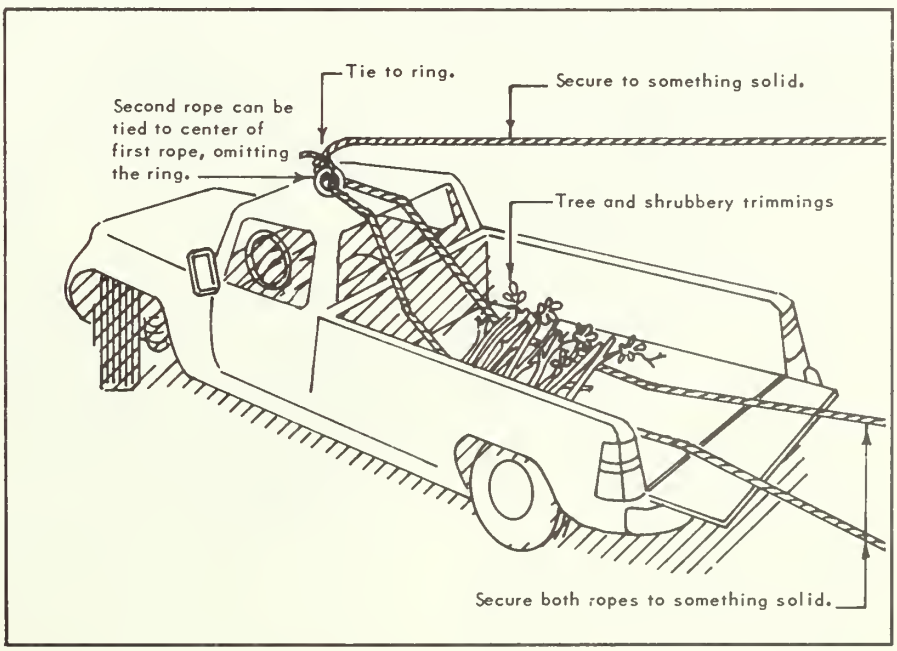
A $25 National Park Service incentive award was presented to Miley for his suggestion.

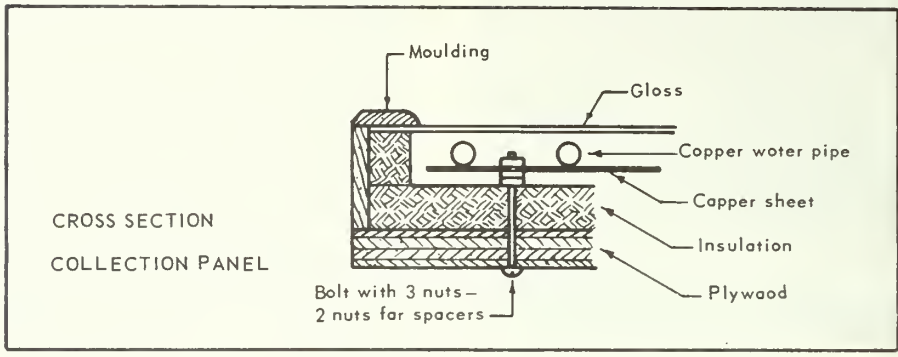


Unloading Trimmings (revisited)

In the Mar/Apr 1981 issue of *Grist*, Vol. 25, No. 2, Iris R. Coumes at the Chalmette unit of Jean Lafitte NHP (LA) shared a quick method of unloading tree and shrubbery trimmings from a truckbed.

Richard J. Peppin, I.E., deputy safety manager with the National Park Service points out to *Grist* subscribers and readers that a safer method would be to attach *both* ropes to something solid such as a tree. This will ensure a lower stressed condition on the rope and a generally safer procedure.



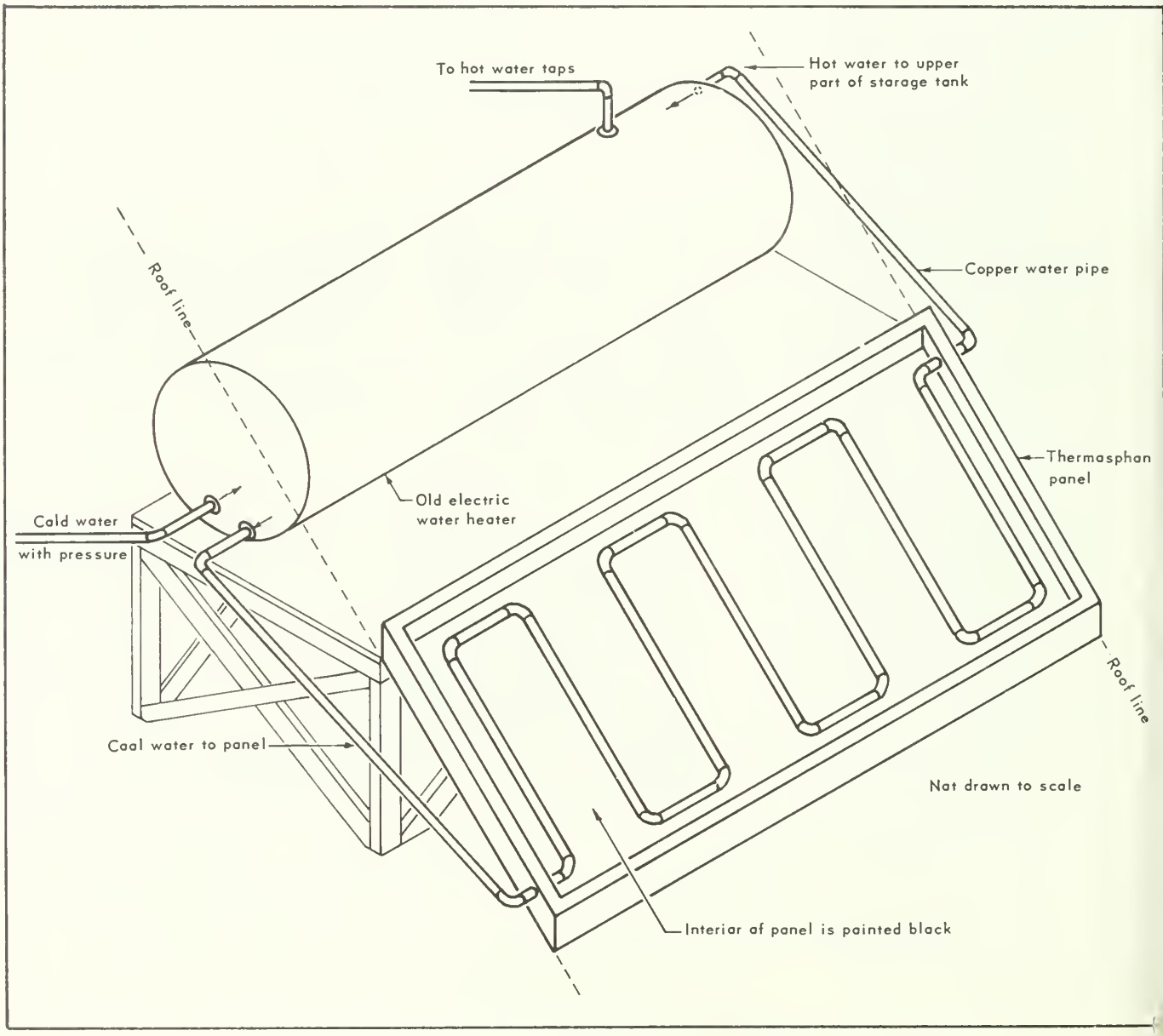


Solar Hot Water Heater

This solar hot water heater was built and is presently in use at Fort Pulaski National Monument (GA). Park Technicians Mark Padgett and Grady C. Webb designed this heater with the advice of Don Essix, a leading solar technician. Actual construction was done mostly by Thomas C. Knight and the Maintenance Division staff.

The solar water heater takes advantage of two designs working together, a storage tank collector on top, and a thermosyphon panel on the bottom which can be folded closed to insulate the system at night or on a cloudy day.

The storage collector has three basic parts: a water tank (an old electric water heater tank), the cover glass (kaolwal—specially designed for use in solar collectors), and an insulated box. The heat of the sunlight is trapped inside the box, reflected off the foil baked insulation, and absorbed by the black tank. →



The thermosyphon panel consists of an insulated box, a cover glass, and a series of copper tubing which the water runs through on a sheet of copper, both painted black. A pipe from the bottom of the tank leads to the bottom of the panel, and a pipe from the top of the panel runs to the top of the tank. When the water in the panel is heated by the sun, it rises and flows into the top of the tank. Simultaneously, the cool water in the bottom of the storage tank flows into the bottom of the panel. Pressure is kept on the system by an incoming water line. The hottest water is drawn off the top of the tank for use in the restrooms.

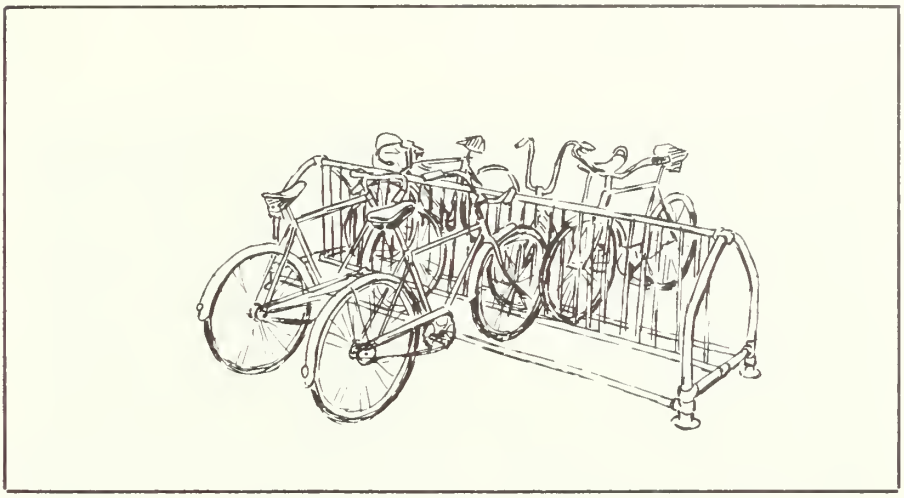
The total cost for materials was about $368. About 112 manhours of work were put into it from the drawing board to final product. This system has the potential of producing over 10,000 kw hrs/yr at this latitude. This works out to an estimated savings of around $300 per year compared to an electric water heater at the present rate for electricity.

Bicycle Racks

Jan Gauthier, museum aid at Voyageurs NP (MN) suggested installing a bicycle rack outside the park headquarters office for employees and visitors.

The rack provides a place to park and secure the bicycles, keeping them off the lawn and out of the way of pedestrians, and helps prevent the theft of the bicycles. Also, the rack provides an incentive for park employees to ride bicycles to work rather than use costly fuel for automobile transportation.

Gauthier was presented a National Park Service certificate for her suggestion.



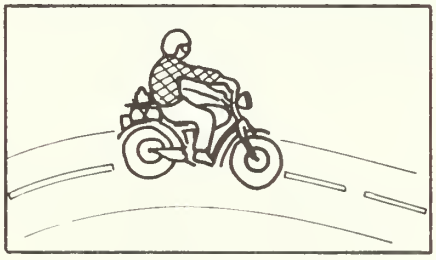
Mopeds—A Viable Alternative to Automobiles?

Superintendent James W. Diamond of Roger Williams Park in Providence, Rhode Island, shares his experiences of using a moped for transportation in connection with his duties as superintendent of parks.

Diamond states that from August 1978 through February 1981, he was responsible for forty-three parks scattered throughout a city of seventeen square miles. In addition to trips from his office on the outskirts of the city to the City Hall in the central business district, Diamond visited each park weekly. Except in the very coldest portion of the winter when the moped was unable to climb the hills in Roger Williams Park near his office from a cold start, he used the moped almost exclusively.

The Honda Express at $325.00, was substantially cheaper than most mopeds at that time. However, when the cost of a helmet, saddle baskets, repair of damage done by vandals, insurance, license plates and annual inspections were considered, the cost per mile of operations was remarkably close to the cost per mile of operating his family Volkswagen Rabbit. The total cost, of course, was much less.

The public relations impact would have to be described as mixed. Some people regarded Diamond's use of the moped favorably in view of its economy and its lack of ostentation. Others, particularly senior citizens,



regarded it as dangerous and undignified. In political circles, it was regarded as simply odd, since the custom was to attempt to obtain the largest and least economical city car possible. Eventually, after the Friends of Roger Williams Park informally approached the Board of Park Commissioners on the matter, Diamond was assigned a two-door 1981 Volkswagen diesel Rabbit which is now giving him over fifty miles a gallon in city traffic. This is far more comfortable and convenient.

In regard to the safety aspect, there is an extensive analysis of various types of mopeds in a recent issue of Consumer Union's *Consumer Report*, which indicates in general that mopeds are considerably more dangerous than automobiles, but less dangerous per passenger mile than bicycles. This publication also evaluates the various mopeds available and recommends the more powerful and expensive Honda Passport at approximately $800.00, which requires a motorcycle license to operate.

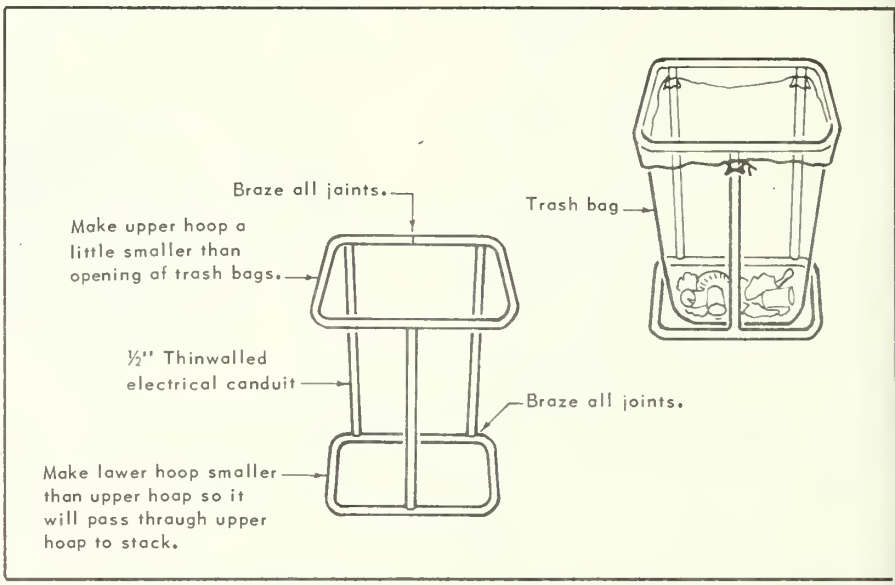
Diamond feels that it is to park staff members' advantage, particularly in the case of security guards, senior supervisors and foremen, to use mopeds and bicycles whenever possible instead of automobiles and trucks. On a moped it is easier to see your parks better than you can from inside a car.

In sum, Diamond feels there is a use for mopeds, particularly in season, but when the additional capital funds are available, small diesel pickup trucks and sub-compact diesel automobiles are both more comfortable and more practical for most purposes—with mopeds primarily to be considered as an auxiliary vehicle.

Temporary Trash Bag Holders

When park and recreation areas hold special events such as outdoor festivals, group picnics, and the like, the trash containers fill up quickly. Excess trash is usually stacked next to the containers and becomes scattered throughout the area. This creates an unsightly, unsanitary condition which leads to increased maintenance cost in policing the grounds.

Facility Manager Robert H. Gerecke of Chamizal National Memorial (TX) developed this temporary trash bag holder which is not only light in weight but also sanitary. The holder is made from ½" thinwall electrical conduit to the dimensions of a standard 32-gallon GI can. It can be constructed by anyone familiar with bending and brazing this conduit.



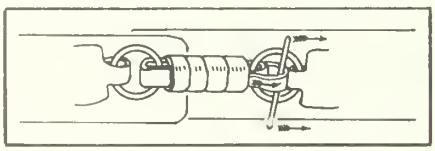
These trash bag holders are easy to handle and store, and they can be set up quickly at strategic places to hold the bulky, light-weight trash usually found at picnics. Approximate cost per holder is $8.75 ($2.25 for material and $6.50 for labor) as compared to $35 for a standard trash can of equal size.

Gerecke received a $70 National Park Service incentive award for his suggestion.

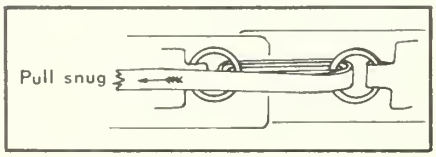
Adjusting Hatbands

Robert C. Zink, District Ranger at Gateway National Recreation Area (NY-NJ) sent in his idea to make a hatband fit correctly.

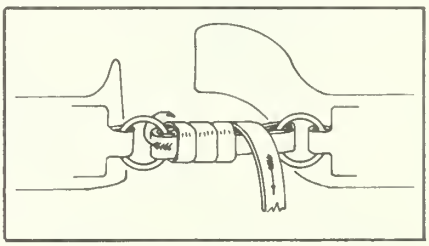
Zink suggests finding the better end of the hatband, pulling it out and releasing the knot. Then place the band



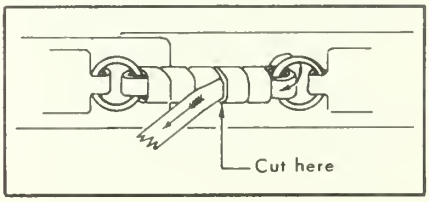
around the hat and make several loops through the two rings, pulling the end until the band is snug.



Next you hold the loops tight and remove the hatband from the hat. Holding the band leather clear, wrap the strap around the loop until the space is filled with wrappings.



Loosen the last two loops and slip the end under the loops and draw it tight. Work the wrappings smooth



and tight, drawing the excess under the loops. Cut off the free end neatly at the loop junctions and make it disappear between the loops.

Zinks says an alternate method is to run the strap through the loops on the back side rather than the front. The free end can be run under all loops rather than just two.

Zink's suggestion eliminates the threads which will show when using the holes in the hatband. It also solves the problem of how to tie the knot when the hatband arrives untied from the manufacturer.

U.S. Department of the Interior
National Park Service and

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GRIST
September/October 1982
Volume 26/Number 5

Blizzard Kits

by Bill Johnson

You and your family are driving along a lonely road after a long visit with friends in the Midwest. The sky was clear when you set out, but a sudden snowstorm has taken you by surprise. You plow through one snowdrift, then another, the next drift is five feet high; when you try to turn around, your rear wheels start spinning. Unable to move forward or backward, you are stranded until rescue crews find you.

It happens every year—hundreds, sometimes thousands, of motorists are trapped by rapidly changing weather conditions. If they are not prepared to hold out for several hours or longer, they might suffer frostbite or not survive at all. The National Safety Council reports that 80 people died in one particularly severe blizzard in January 1978, many of them were trapped in their vehicles awaiting rescue.

Yet there are simple precautions you can take if you plan to drive through Snowbelt states this winter season, according to Frank Kenel, AAA Traffic Safety Director. Kenel and Charles Butler, Senior Educational Consultant for the AAA, have compiled a list of items they recommend every driver carry in the car during the winter:

- Ice scraper and snow brush
- Short-handled shovel
- Traction mat (or possibly, cat litter stored in one-quart milk cartons)
- Tire Chains
- Blankets
- Flashlight and batteries (the batteries may freeze, but can be rewarmed with your body heat)
- Quality first aid kit
- Flares or warning triangles
- High-calorie, easily stored foods (candy or fruit bars, honey, raisins and semi-sweet chocolate)
- Jumper cables
- Tow chains (make sure you know where to attach them, front and back)
- Fire extinguisher
- Additional warm clothing
- Waterproof boots.

Snow covered cars after a heavy winter storm. Photo by Kathleen A. Pleasant

These are the essentials, but there are situations where even more caution is needed. "You have to think about the environment you can get caught in," says Frank Kenel. "If you're traveling on a major highway, you might get stranded overnight, but you can figure someone will find you within 12 hours. But if you're traveling on a county road somewhere, it might take a lot longer."

In these cases, you may also want to carry a Blizzard Survival Kit. The components for this kit were selected by the Minnesota Para-Rescue Team, a volunteer search and rescue unit operating in one of America's coldest states. The Blizzard Survival Kit can be assembled at little or no cost, using supplies you have around.

(continued on p. 34)

Safety

1957 PARK • PRACTICE • PROGRAM 1982
Twenty-Fifth Anniversary

Grist

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The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

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The Park Practice Program includes: *Trends*, a quarterly publication on topics of special interest in park and recreation management programming; *Grist*, a bimonthly publication on practical solutions to everyday problems in park and recreation operations and *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and selected back issues in vinyl binders with indices and all publications for the calendar year.

The initial membership fee is $80; annual renewal is $20. A separate subscription to *Grist* is $15 initially, and $7.50 upon renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

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Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

BLIZZARD KITS

(continued from p. 33)

For a container, use a three-pound size coffee can with plastic cover. Inside the can, pack the following items:

- Several candle stubs, canned solid fuel or solid fuel tablets
- Matches (not a butane lighter, which will freeze)
- Additional high-calorie foods (more candy, raisins and honey, plus instant coffee, tea and soup)
- Spoons
- Can opener
- Facial tissues, paper towels or toilet paper
- Aspirin
- Bright red or orange cloth (can be used as a face mask, for first aid, or tied to your antenna to signal rescue crews)
- Two dimes taped to the inside of the plastic cover (Also keep the AAA Super-number handy: 1-800-336-HELP)
- Small compass (You would need to get away from the metal in your car to use this. But leave the safety of your car only for dire emergencies. Many deaths of stranded motorists in winter resulted from people deciding to walk to safety. In almost all cases, staying in the car is safer.)
- Penknife or paring knife
- Safety pins
- Extra gloves, mittens, scarves and stocking caps (tie around the outside of the can with sling).

Once you've assembled these items, you can punch three holes in upper rim of the can and hang it by a string from the rear view mirror when necessary. Then by placing the lighted candle stubs or canned solid fuel underneath the can, you can melt snow for instant coffee, tea or soup.

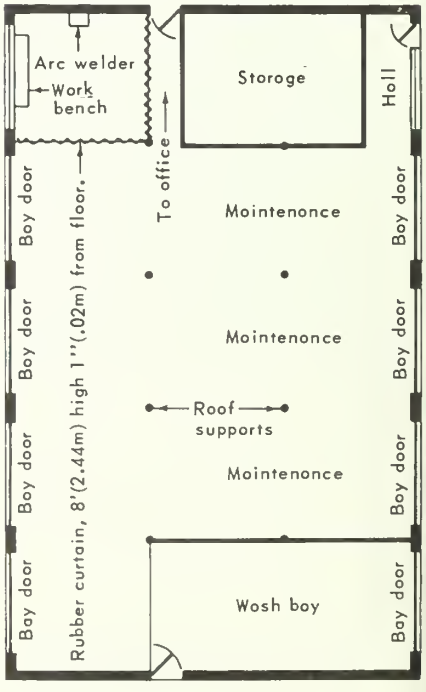
Be sure to keep this equipment in the passenger compartment of your vehicle. Your trunk may be frozen shut or buried in snow and you will want these items where they will be available.

It may sound like a lot of trouble to assemble all of the gear for a crisis that may never occur. Taking the time to prepare for the worst is one of the best ways to make winter driving safer and more pleasant.

Bill Johnson is a copywriter for a Minneapolis, MN, advertising agency. In his spare time he does freelance writing and cartoons. This article originally appeared in the Jan/Feb 1982 issue of AAA WORLD magazine.

Safety Curtain

The welding area of the Vinton Maintenance Shop (Blue Ridge Parkway (NC-VA)) is located beside the entrance door to the office area. Since so many people pass through this area each day, there exists a potential danger to passers-by when welding is being done. A blind is available for use when someone is welding but it is time-consuming and cumbersome to get out and set up, and



PLAN VIEW OF SHOP

thus, received very little use.

Maintenance Worker James R. Hix suggested installing a permanent rubber curtain to create a protective barrier between the welding area and anyone walking by the area. The curtain should be at least 8' long and hang to within 1" of the floor.

The distance between the wall and roof support is 13' and the same is true from the roof support to the bay door wall. The curtain should be installed on traverse rods so it can slide back against the wall when not needed.

This rubber curtain could prevent accidents to anyone passing through the area when welding is being done and it provides a more viable alternative to the blind.

Hix received a $25 National Park Service incentive award for his suggestion.

Editor's note:
Connie Villar of the National Park Service's Safety Management Division offers these comments regarding the above suggestion.

Although the rubber shielding curtain idea proposed by James Hix is an improvement over the cumbersome blind, there are commercially available transparent welding curtains that provide a greater degree of safety. The advantages of these transparent safety welding curtains are:

- eliminates dangerous Ultra Violet (UV) radiation. Nearby workers or visitors are not exposed to the UV radiation which can cause painful "welder's flash" when the arc is viewed by unprotected eyes
- eliminates "closed in" feeling for employee
- will not support combustion (flame resistant)
- may be used around MIG, TIG, ARC, PLASMA, GAS or other high amperage welding arcs
- decreases arc glare
- provides more light into welding area
- increases supervision

One such product is Spectra Welding Curtain [6] by Wilson Sales Company, 732 N San Gabriel Blvd., Rosemead, CA 91770, (213) 288-4222. (The mentioning of this company should not be interperted as an endorsement of this specific product by the National Park Service.)

It is recommended by OSHA in CFR 1910.252 (f)(1)(iii) that the height of the screen or curtain from the floor be at about 2 feet instead of an inch as in Mr. Hix's suggestion. This is necessary to allow for sufficient ventilation and facilitates housekeeping. If the welding is to be done at a lower level, then the height of the curtain should be commensurate with that level.

Warning re Wood Burning Stove

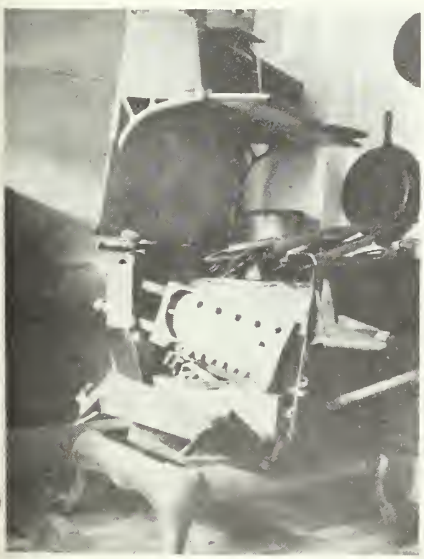
Resource Management Ranger William F. Conrod of Glacier National Park (MT) offers a warning regarding wood burning stoves.

Conrod states that on February 27, at a back-country ranger cabin in the park, an explosion destroyed an antique wood burning cast iron kitchen cook stove. Luckily, no one was hurt, although two persons were standing within five feet and the blast hurled metal fragments up to 89 feet away from the stove. The stove had a cast iron water heating jacket next to the fire box.

Until the previous autumn, the cabin's gravity flow water system was connected to the water jacket, heating water and then circulating it to a hot water tank.

During the fall, the stove was disconnected from the plumbing to make way for progress—a new solar water heater. At this time, the two galvanized pipes coming from the stove's water jacket were capped with threaded galvanized plumbing caps. The water jacket was now a sealed system, setting the stage for the ensuing explosion the next time the stove was fired up. This was done during a winter ski patrol with the explosion occurring about one hour after the fire was kindled.

Since there are still a few of these stoves in various NPS buildings and perhaps elsewhere, Conrod says that special care should be taken *not* to seal the water jacket which may or may not be inside the stove. If pipes come out of the back of the stove, it may be assumed that there is a water heating jacket inside the stove. The pipes should not be capped, even if it is felt there is no moisture in the water jacket.



Kitchen stave after steam explasian af water heating jacket.

Water heating jacket remaved from stove.

Radial Arm Saw Bench

When the need for a lead or tail support for a radial arm saw in the Maintenance Shop arose, Maintenance Laborer Michael B. Younggren, Fort Scott National Historic Site (KS) built this one.

Younggren took two old display cases (24'' x 72'' x41'') that were to be discarded. He removed the glass and sloping shelves, and cut the cases to a height of 32¾''. Three shelves were inserted (12'' x 24'' x 70'', 7'' x 24'' x 70'', and 6'' x 24'' x 70''). The shelves have a sliding door in front that can be locked. A top of oak flooring was attached that measures 28½'' x 76½'' x 33½'' to the lead and tail off the radial arm saw.

This radial arm saw bench gives the Maintenance Shop a working area of approximately 30 square feet to work on (17¾ sq foot lead and tail off). It also provides 51 square feet of additional storage space that can be locked.

Younggren estimates labor to construct and assemble the bench at $79. The retail cost for this work area and storage space would be approximately $590.

A $57 National Park Service incentive award was presented to Younggren for his suggestion.

Growth Regulator to Reduce Trimming

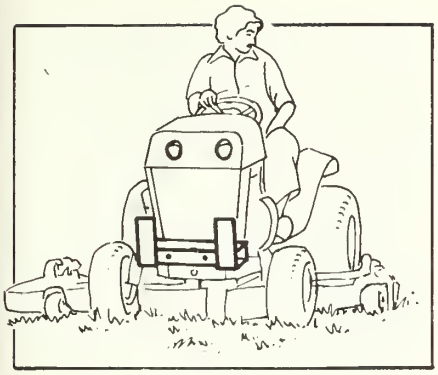
Kenneth J. Caldwell, maintenance foreman at the Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park (VA) came up with a suggestion to help in the mowing of grass around tombstones.

Fredericksburg NMP is a 12½ acre cemetery that contains 7500 tombstones. The mowing cycle during the growing season (April 1 — October 1) is every 10 days to 2 weeks. Trimming around the tombstones used to require 2 trimmings per month using Stanley electric rotary trimmers with portable generators for power. Each trimming required 8 man days of labor.

Caldwell suggested using 3M Product Embark 2-S mixed at a ration of 3 pints to 100 gallons of water. (Total gallons of mix used 200 gallons or 6 pints A.1.) Caldwell suggested using a power sprayer with a fine nozzle and wetting grass areas 1' wide around the stones.

By using the growth regulator the trimming cycles were reduced from 12 to 3 cycles per growing season (75%) and the time required to accomplish this was reduced from 96 to 24 man days.

A $245 National Park Service incentive award was presented to Caldwell for his suggestion.



Tractor Mower Push Attachment

Jerry L. McMillion, maintenance work leader at Biscayne National Park (FL) developed a brace to be mounted on the front of a tractor mower so that picnic tables (with one-piece tubular pipe legs that serve as skids) can be easily moved while one is mowing.

The brace is made by welding four plates (¼'' x 3'' x 17'') together to form a tube. Then weld two bumper plates (¼'' x 2½'' x 6'') on each end. Drill two holes in the tube to take a 3/8'' x 4'' bolt and space them to fit the mower.

Without this new device, when someone mowed with a tractor mower he or she would have to stop the mower, drag the table out of the way by hand, get back on the mower and then continue mowing. This involved a lot of unnecessary time and effort when mowing campground and picnic areas.

With the availability of this tractor mower attachment, the person can mow areas in much less time and can save fuel since there is no longer a need to start and stop the mower when a table is in the way. Also, there is much less chance of personal injury in trying to move picnic tables by hand.

McMillion was presented a $35 National Park Service incentive award for his suggestion.

Sign Frames

There are approximately 43 metalphoto signs at Mound City Group National Monument (OH). These signs are attached with adhesive to a steel backing of the same size. Various adhesives and sealants have been used but the signs invariably come loose from the steel backing, leaving them prime targets for souvenirs, frisbees, vandalism, etc.

Maintenance Foreman Jerrold D. Napier noticed the signs were approximately the same thickness as a storm window sash. He suggested going to a local shop that builds storm sash, purchasing the aluminum frame rails used for this purpose, and having them cut to fit his signs with the corners mitered to fit. He also purchased the corner fasteners and rubber gasket that secure the glass or, in his case, the sign within the frame. These frames were then installed on the signs in the field.

As an added vandal-resistant measure, he cut small triangular-shaped gussets of aluminum, and secured all four corners with pop rivets on the under side of the frame. The frames are available in polished aluminum or white.

The approximate cost to frame each 10'' x 12'' sign was $2.00 (plus 15 minutes of laborer's time to install). This is a substantial savings over the approximately $25-30 plus labor cost for replacing a sign that was damaged or stolen. In addition to saving money, these frames give the signs an attractive, finished appearance.

Napier received a $40 National Park Service incentive award for his suggestion.

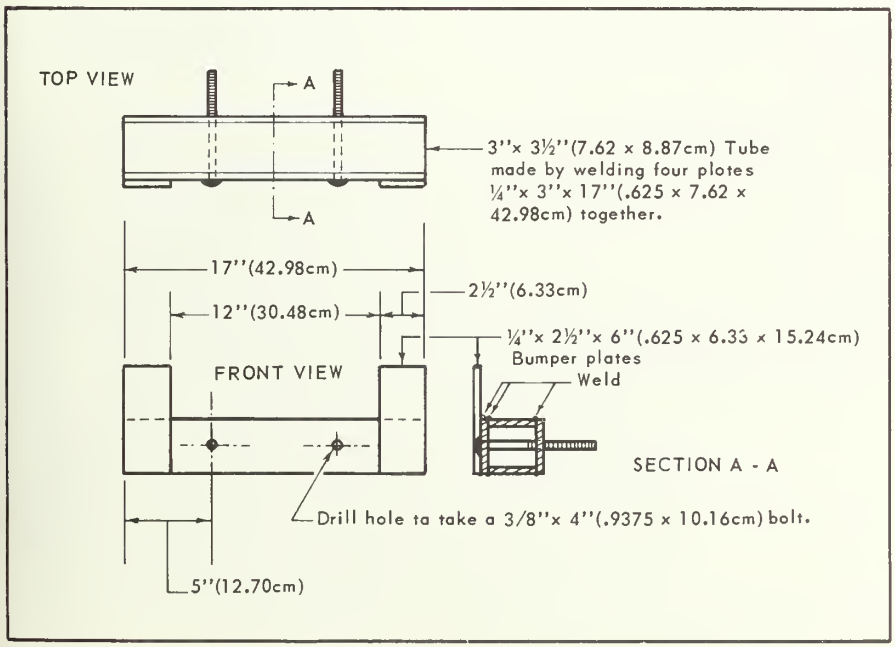
Nickel Cadmium Batteries

Keeping abreast of various products on the market can save a considerable amount of money.

The Protection Division at Independence National Historical Park (PA) was using disposable batteries which annually cost over $500.

Looking through a 1980 Radio Shack catalogue, Park Ranger James C. Jackson, Jr., suggested that 20 nickel cadmium battery chargers and 120 rechargeable nickel cadmium batteries be purchased for the division's use, and that 2 sets of batteries and one charger be issued to each patrolman.

Jackson estimates the park could save approximately $840 per 3-year period with his suggestion. He was presented a $75 National Park Service incentive award for his cost-saving idea.



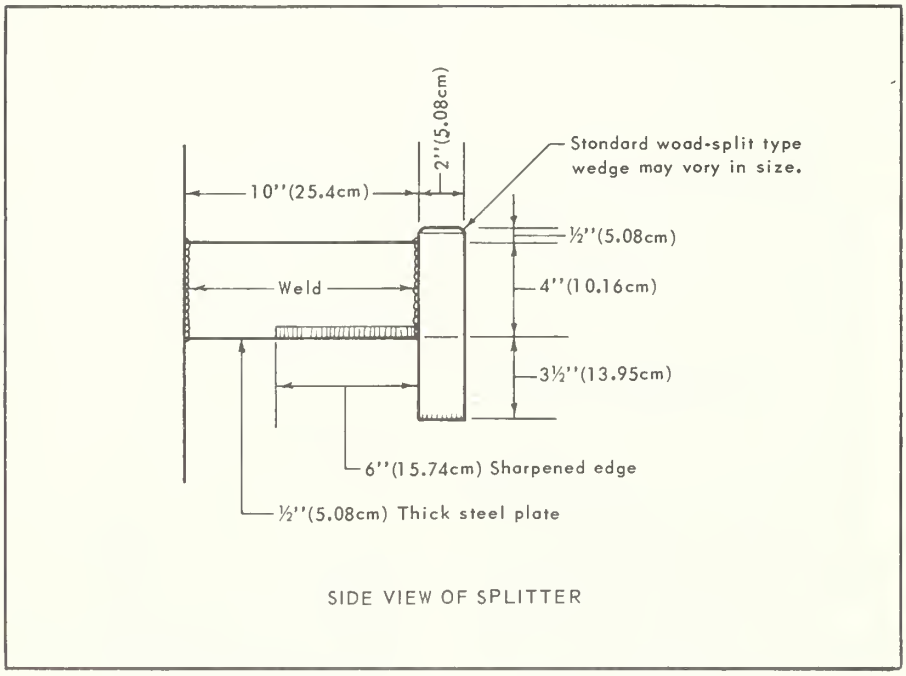
Wood Splitter

Splitting wood can be a dangerous chore. Blocks of wood are stood on end and while holding a wedge in one hand, a person strikes the wedge with a sledge hammer. Missing the wedge can result in mashed hands or fingers. The wood block can slip or the wedge can turn sideways. In harder woods, wedges sometimes fly out when hit with a hammer. There is little control and a lot of potential danger when trying to split wood using this method.

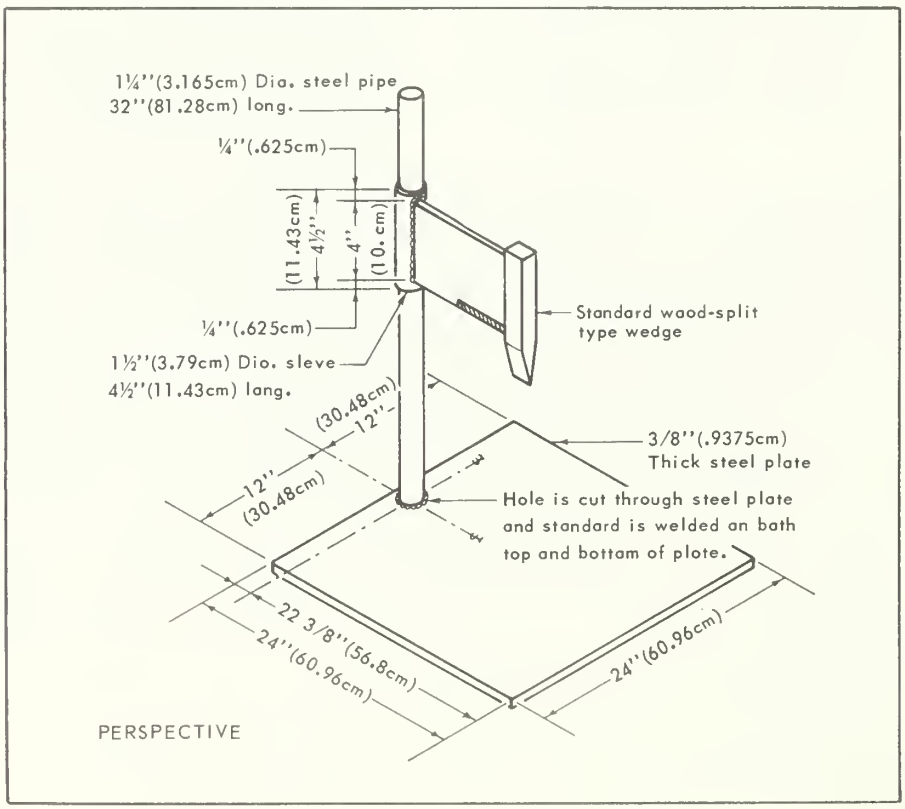
Auto Mechanic Hershel Dean Effler of the Blue Ridge Parkway-Oteen (NC-VA) developed a wood splitter to make this job easier and safer to accomplish. Using scrap materials, Effler used a 24'' x 24'' steel plate as a base. He cut a hole through the plate, inserted a 1¼'' diameter by 32'' long steel pipe standard and welded the standard on the top and bottom of the plate.

A ½'' x 4'' 10'' steel plate wedge arm was welded to the pipe sleve with a standard wood-split type wedge attached to the end.

This wood splitter offers better control over the block of wood being split since it is held in place by the splitter base and wedge arm, rather than a person's hand. Since the splitter holds the block of wood and wedge, time is saved in keeping the block upright and the wedge



SIDE VIEW OF SPLITTER



PERSPECTIVE

in place. With these advantages, work production would increase 80-100%, create a safer work situation and improve the quality of the work.

Effler was presented a $75 National Park Service incentive award for his suggestion.

Carrying Case for Water Samples

Richard I. Hayworth, maintenance worker at the Blue Ridge Parkway-Bluffs (NC-VA) has made collecting water samples easier and safer.

Water sample bottles were laid on a truck seat after being filled, often becoming disorganized, mixed up with empty bottles, or rolling off the truck seat and onto the floor. A problem arose for the driver if the bottles broke or if they rolled under the driver's feet.

Hayworth developed this carrying case for the water sample bottles which is 15'' x 15'' x 4'' deep, made of 1'' dressed lumber with 6 bottle wells each 2¾'' in diameter. Plywood can be used for top and bottom if desired. A screen door pull makes an excellent carrying handle. Each water system served is identified on top of case with embossing tape. Nails, screws, handle and tape cost less than $1.00, and the case can be made of scrap lumber.

The case provides an efficient, organized method of locating a particular bottle as well as a safer means of transporting them.

PERSPECTIVE

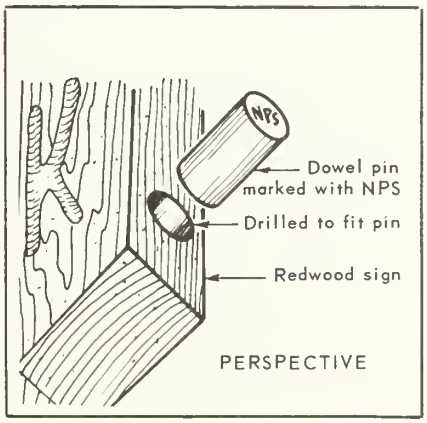
A $50 National Park Service incentive award was presented to Hayworth for his suggestion.

Sign Marking for Easy Identification

Redwood and other types of wooden signs used to mark views and overlooks on the Blue Ridge Parkway (NC-VA) are highly susceptible to theft and replacing them when stolen is costly to the Parkway.

Sign Painter Helper Cindy Young developed a method to discretely mark these signs so if stolen, they can be easily identified by NPS employees, and the persons responsible for the theft can be duly prosecuted.

Young suggests boring a hole in the side of the sign the size of a small dowel pin so as not to lessen the strength of the sign. Mark one end of the dowel pin with the letters ''NPS'' and drive the pin into the sign. This small identification will not be easily discernible, yet it will be sufficiently noticeable for NPS employees to make proper identification if necessary. Being able to recover any wooden signs, when stolen, instead of having to replace them, can save a significant amount of money for the Parkway staff.



PERSPECTIVE

Cooling Radiators

In Hot Springs National Park, Arkansas, the problem is not making hot water, but making hot water cool. Other areas are also learning that natural sources of hot water, or residual hot water from power generating, can be useful if it can be cooled to appropriate temperatures.

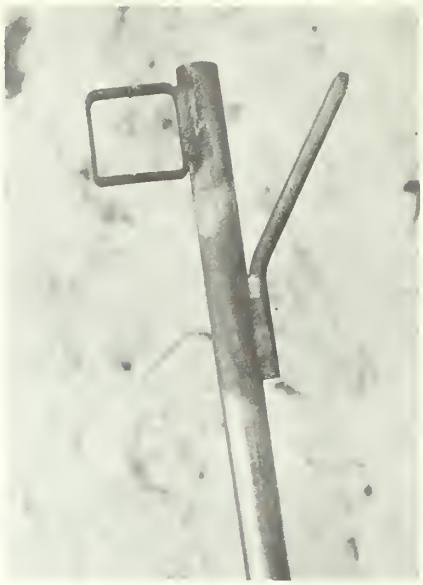
In Hot Springs NP, a centrally located water cooling station cools the 143-degree water to a usable 90 degrees or below for use in the bathhouses. But a problems arises when the cool water storage reservoir is full and the system automatically turns off with a water level sensing relay. Then, on extremely low temperature nights or days without water flow, the air-cooled heat exchanger radiators freeze and burst, resulting in trouble and expense.

Utilities Foreman Eugene C. Stringer has come up with an idea that prevents the freezing and bursting, resulting in an estimated $650 savings in tangible results and a possible $30,000 savings in replacing burst radiators. His plan calls for adjusting contacts on the water level sensing relay to maintain the water level of the cool water storage reservoir at a level of 5′ to 6′ and keeping the hot water level at 9′ to 10′. That way, a gravity flow is set up so water continually flows through the radiator 24 hours a day, assuring the radiators will not freeze and burst.

The only modification to the system is the installation of a summer to winter switch to make the fans independent of the pumping operation so the fans cycle on the temperature sensing thermostat at the cooling tower only in cool weather.

Stringer received a $125 National Park Service incentive award for his suggestion.

Bear Poles



As more and more people use backcountry areas to camp, bear-camper conflicts increase. A primary cause of the conflicts is the attractive(to bears) food the campers carry. If the food is kept out of the bears' reach, and other good camping practices are followed, bear damage and injury encounters should decrease. Although many factors are involved in the bear-camper conflict, keeping food from bears will greatly help.

Many types of food storage methods have been tried at Grand Teton National Park (WY) with varying degrees of success, expense, maintenance requirements and camper usability. Food lockers become trash receptacles, cable systems become entangled, and some methods are just too complicated or too much work for people to use.

Last summer, South District Ranger Walter D. Dabney developed two types of food storage systems which he refers to as bear poles.

The first type bear pole consists of a single pole constructed out of 2'' thick, black, non-galvanized water pipe. The pipe is cut to a length of 17'. Using a ½'' rebar, he fashioned four simple U-shaped hooks that were welded near the top of the pole. The pole is then placed 3-4' into the ground. Rock is placed in the hole and tamped in well to within several inches of the top of the hole. Then a half sack of Sacrete is mixed and poured around the top. This produces a pole between 13-14' in length with a minimum of 10' from the ground to anything hanging from a hook. A screw-on cap should be placed on top of the pole to keep water from collecting inside. The pole cannot be placed adjacent to a tree or object that a bear could climb or climb up on.

To use the pole, Dabney got a piece of ¾'' x 10' thin-wall, steel, electric conduit. On the end of the conduit he welded a hook and a loop to hang this pole onto the bear pole. When not in use, the pole used to lift the food sack to the top (hoisting pole) is simply hung on one of the rebar hooks.

The second type pole is being used in areas with multiple sites, close together. The hoisting pole is the same. The bear pole is a goal post configuration, with 4 sets of ½'' rebar U hooks welded to a 7' cross member, providing 8 hooks. A 9th and 10th hook are welded to the ends of the cross member. The hanging pole is hung on one end. The side poles are the same dimensions as is the single pole configuration (17'). Since water pipe comes in 21' sections, one length makes 3 cross members.

Dabney has had a number of these bear poles in place since last summer and has had reports of bears attempting to defeat the poles but with no success.

National Park Service
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GRIST

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First Aid for Special Populations

Being able to provide needed first aid to all visitors to park and recreation areas is essential. Many current first aid procedures do not take into consideration the specific and special needs of elderly, and physically and mentally impaired visitors.

Park Ranger Cindy L. Orlando of Mesa Verde National Park (CO) suggests the following outline be a required portion of all first aid training sessions. Developed by John Heger and Ray Bloomer of Boston National Historical Park in 1977, this "First Aid for the Special Needs of Handicapped and Senior Citizens" offers some important methods in assisting special populations.

First Aid for Special Needs: Handicapped and Senior Citizens

The objective of this outline is to describe and emphasize the special needs of some victims of acute illness or accidental injury. Handicapped and elderly persons comprise approximately 15% of our nation's population. These persons have the same rights as all other persons, and in an emergency, they deserve the same courtesy and quality care that should be provided for all. Do not make the mistake of thinking that since these persons are limited in their physical abilities, they must also be limited in their thinking abilities. In an emergency situation, they will need your respect as well as your help.

Visually Handicapped Persons

1. Remember that what is obvious to you may not be discernible to a visually impaired person.
2. Don't be shy when offering assistance.
3. Let the victim know specifically what has happened and what is happening. Describe the scene and orient him to the area.
4. Explain who you are and what you are doing there. Explain all first aid procedures.
5. Stay with the victim as much as possible. Never leave a visually impaired person without letting him know. If you must leave the victim, notify him when you leave and when you return.
6. If the victim uses a cane, keep it with him for later use.
7. Never take a guide dog away from the victim unless absolutely necessary. If you must separate the dog from the victim, notify the victim's family or the school where the dog was trained for boarding arrangements.

Persons With Hearing Impairment

1. Hearing impairment is an invisible handicap. Try to recognize it quickly by watching for the following signs:
   a. Victim fails to respond to sounds.
   b. Victim shakes his head and/or points to his ears when spoken to.
   c. Victim moves fingers and hands in a repeated pattern.
   d. Victim moves lips without making a sound.

(continued on p.42)

Visitors Considered

Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

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The Park Practice Program includes: *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a bimonthly publication on practical solutions to everyday problems in park and recreation operations including energy conservation, cost reduction, safety, maintenance, and designs for small structures; *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and a library of back issues arranged in binders with indices, and all publications for the remainder of the calendar year.

The initial membership fee is $80; annual renewal is $20. A separate subscription to *Grist* is $15 initially, and $7.50 upon renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

First Aid for Special Populations

(continued from p.41)

e. Victim may strain to speak; speech lacks inflection and tone quality. He may speak very loudly.
f. Victim may gesture as if to write.
g. Victim is unusually visually alert, following your every move with eyes.

2. Those who became deaf prior to learning language may have communication problems. The following are common examples:
   a. Speech unintelligible or difficult to understand.
   b. Person may NOT use voice in public.
   c. Person may have difficulty understanding complicated or figurative language.

3. Communicating with hearing impaired persons:
   a. Use simple language. Repeat key words as necessary.
   b. Use gestures.
   c. Use pencil and paper, if available.
   d. If the person is reading your lips, face him or her when you speak. Do not speak rapidly.
   e. Do *not* exaggerate your lip movements for a lip reader.
   f. Do not shout at a person using a hearing aid. Shouting will distort your speech.
   g. If the person can speak, be aware of possible language difficulties. For example, a deaf person who has no sensation in legs may point to them and say, "Nothing."

4. If the victim is to be transported to a hospital, try to notify the emergency room staff in advance so that they can make arrangements to contact a sign language interpreter, if necessary.

Elderly Persons

1. Approach the elderly person in an emergency with sensitivity and understanding. Reassure him or her to ease the overwhelming feelings of fright and loneliness that members of this age group often experience at such times. A fear of not knowing what is happening or where he or she is going may make an elderly person act in an irrational manner. You can often prevent this by providing the person with information in a reassuring manner.

2. Be aware of physiological differences between the young and the old. Although some of these differences may be quite obvious, others will be less readily discernible.
   a. Elderly persons often perceive pain differently due to the deterioration of nerve endings in the body. This means that an elderly victim may not be aware of a relatively serious injury.
   b. Elderly persons often do not adjust to temperature as well or as quickly as younger persons. Therefore, you may feel quite warm in a particular environment where they are cold - believe them; then take appropriate action to make them comfortable.
   c. Elderly persons often have difficulty getting their balance quickly. Try not to rush them.

3. Remember that elderly persons are likely to be suffering from chronic illness, visual impairment and/or hearing impairment. Look for signs and symptoms of each and be prepared to judge how the condition may affect your rendering first aid.

4. If possible, contact one of the victim's close relatives or friends to be with and comfort him or her.

Tour Passes

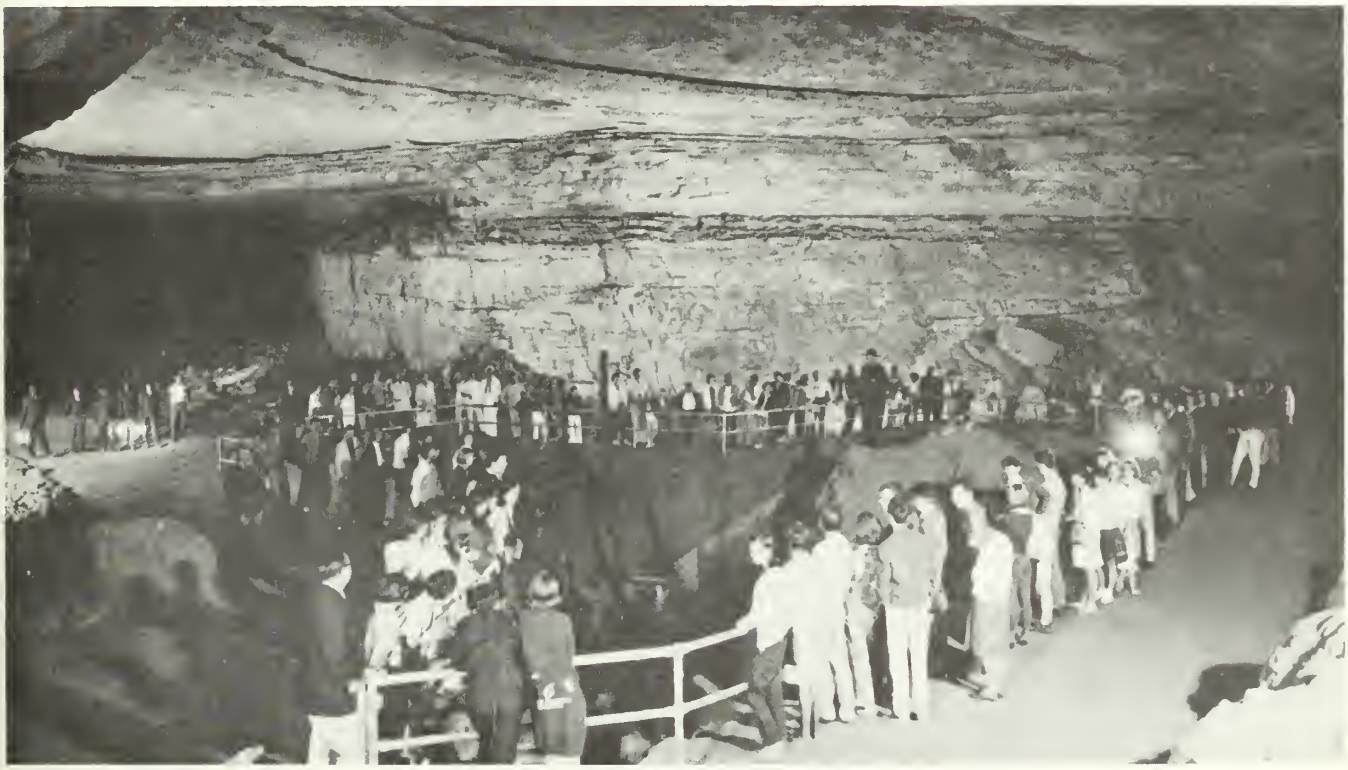
Although the Trog Children's Program was popular at Mammoth Cave National Park (KY), the tour guide experienced some problems when parents occasionally left children unattended before the guide arrived for the tour.

Supervisory Park Technician Rachel Wilson came up with a suggestion that will be of significant benefit to all concerned.

Wilson suggested having 3'' x 5'' tour passes mimeographed which would contain all pertinent information regarding the upcoming tour and a place for the signature of the person taking the reservation.

The parent would be instructed to read the information on the pass and to personally present the pass to the guide at the beginning of the tour. This would prevent children from being left to their own devices while waiting for the tour to begin, and would also ensure that both parents and children would have the necessary information regarding the tour.

A $25 National Park Service incentive award was presented to Wilson for her suggestion.



Interpretation Aid

Many visitors to park and recreation areas are keenly interested in the name and species of the wildflowers that are presently growing, or are native to that particular area. Although many park areas include this information in slide shows, not all visitors have the time or occasion to view these shows.

Supervisory Park Ranger Randall A. Kendrick of the Blue Ridge Parkway (NC-VA) suggests displaying color photographs of common wildflowers in bloom at Mabry Mill and at other Parkway visitor contact stations. The Polaroid SX-70 color prints or the comparable Kodak system would do very well.

A picture could be taken of a wildflower species that just came into bloom, an explanatory caption typed, and both could be displayed for visitor viewing in an album page that had a clear plastic covering. These photos can be removed and replaced with those of the next emerging species, and can be used year after year.

Kendrick received a $25 National Park Service incentive award for his suggestion.

First Aid Communication Kit

As park and recreation areas experience an increase of foreign visitors, more and more attention is being focused on ways to effectively communicate and serve our non-English speaking visitors. Especially important are those times when a foreign visitor needs emergency first aid.

Park Technician Michael John Meyer of Arches National Park (UT) suggests developing a standardized first aid kit which contains medical questions in 5 or 6 foreign languages (French, German, Spanish, etc.). These questions would be written in standard and phonetic pronunciation form. If the pronunciation was difficult, the injured person or a companion could read the questions. Meyer also suggested including in the kit a diagram of the human body which could be labeled in the different languages.

Since few park and recreation personnel know more than one language, this kit would provide a better means of serving our non-English speaking visitors.

Meyer received a $75 National Park Service incentive award for his suggestion.

ENGLISH	GERMAN	PHONETIC PRONUNCIATION
I understand	Ich verstehe	ikh fehrshtayer
I don't understand	Ich verstehe nicht	ikh fehrshtayer nikht
Do you understand?	Verstehen Sie?	fehshtayern zee
Can you show me?	Konnen Sie mir zeigen	kurnern zee meer tsighgem
Can I help		
What do yo		
Show me?		
Yes		
No		
Where?		
When?		
What?		
How?		
Who?		
Why?		
Could you		
Can you t		
Please po the book		
Do you sp		
I don't s		
Please wr		

ENGLISH	FRENCH
I'm going to take your blood pressure	Je vais prendre votre tension
It's nothing to worry about	Il n'y a pas lieu dė s'inquieter
I want you to go to the hospital	Je desire que vous alliez a l'
You'	
It's	
ankl	
appe	
arm	
arte	
back	
blad	
bloo	
bone	

English	Italian	PHONETIC PRONUNCIATI
Yes	Si	see
No	No	No
Please	Per piacere	pair peeanchayray
Thank you	Grazie	grartseeay
Thank you very much	Molte grazie Tante grazie	moaltay grartseeay tahntay grartseeay
That's all right	Va bene	vah bainay
You're welcome	Prego	praygoa
Good morning	Buongiorno	bwonjoarnoa
Good afternoon	Buongiorno	bwonjoarnoa

Informative Signs

Park Technician Barry Mathias of Yellowstone NP (WY-MT-ID) saw a need to modify the information signs within Yellowstone NP.

The campground information signs at all of the entrance stations emphasized only the closed or full status of park campgrounds. It was discouraging for park visitors to enter the park and see only closed or full signs on the campground boards. The visitor had to extrapolate from the boards that landmark names such as Tower Fall, Slough Creek and Bridge Bay also represent campgrounds, and that these campgrounds were still open.

Mathias' suggestion was to inform visitors where they can camp rather than illustrate and emphasize closures or full campgrounds. He also suggested simultaneously signing open campgrounds with the closed ones.

A $200 National Park Service incentive award was presented to Mathias for his suggestion.

Puncheon Bench

Maintenance Foreman Mitchell C. Packett of George Washington Birthplace National Monument (VA) had the idea for this inexpensive and easily constructed bench.

Native red cedar was the wood selected because many of these trees are lost in the park to wind storms and old age. The cedar has a handsome wine color and pungent cedar smell recognized by the visitors.

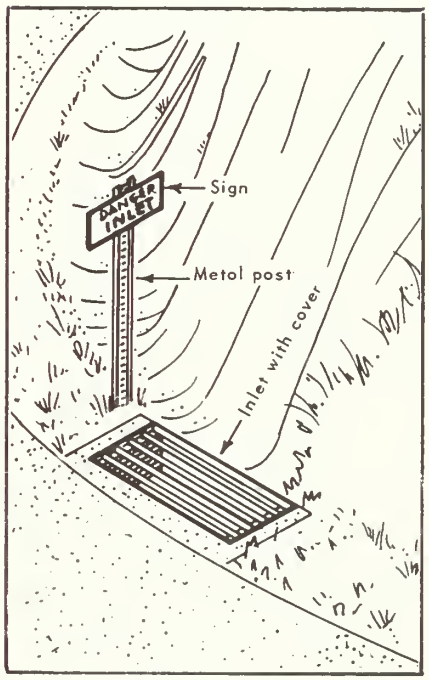
The bench legs are anchored in the soil to make them steady and they rest on buried cinder blocks to stop further settling.

Each seat is made by first selecting a six foot piece of cedar without any center rot. It is cut lengthwise in half with a chain saw and the seat top is lightly sanded to remove any saw marks or splinters. The bottom of the seat is drilled to accept the legs which are pounded into place. Two bolts are used to attach the back to the support posts.

No stain, sealer or paint was used so as to portray, as closely as possible, a bench of the 1750 period.

Two simple benches can be constructed in approximately 3 hours. Also, the bench can be made without the back rest and still provide adequate seating for visitors.

Drop Inlet Markers



Supervisory Park Ranger Francis T. Wolfe came up with this idea to alert visitors to unmarked or uncovered drop inlets along the mountain road at the Kennesaw Mountain National Battlefield Park (GA).

Wolfe recommends marking each drop inlet with a 4"x8" yellow metal marker mounted on a metal post and placing the marker approximately 30" from the road surface level. For those inlets immediately adjacent (within 18") of the traveled portion of the road, Wolfe suggests constructing metal grates to cover them.

These markers will serve as a warning to drivers that some degree of driving hazard exists and, hopefully, will reduce property damage or personal injury.

A $25 National Park Service incentive award was presented to Wolfe for his suggestion.

Maintenance

Safer Method for Protecting Historic Feature

When removing cannon tubes from carriages for routine maintenance at the Petersburg National Battlefield (VA), one would use the front-end loader with chains wrapped around the cascabel and muzzle, or an iron/steel rod was inserted in the tube at the muzzle end to secure the chains. These items often slipped and rolled which almost caused serious accidents on several occasions. Damage to the historic tube would vary per attempt to remove or replace.

Park Technician Isaac C. Kelley suggested using a nylon sling similar to one used for incapacitating horses with leg injuries. The design of the sling is such that the chains and/or rod and chain can be eliminated. Also, there is no damage from scratching, gouging, etc.

The nylon sling is rated at 2500 lbs. breaking strength. When placed under the tube, the sling provides secure, stable operation when lifting with a bucket-loader, hoist, etc.

Kelley feels his suggestion would better protect historic artifacts and provide a safer working environment for employees who must perform these maintenance operations.

A $150 National Park Service incentive award was presented to Kelley for his suggestion.

Editor's Note:
Connie Villar of the National Park Service's Safety Management Division states there are many variables to be considered regarding the use of the nylon sling for lifting cannons such as:

1) The rating of the sling. The rated capacity shall not be exceeded.

2) The load must be balanced to prevent slippage.

Some standards which must be looked at are CFR 1926.251 which covers rigging equipment for material handling and CFR 1910.184 — Slings.

Concrete Fire Ring

This concrete fire ring was developed by Tom Miller and Harry Gordon of Shawnee State Park (PA).

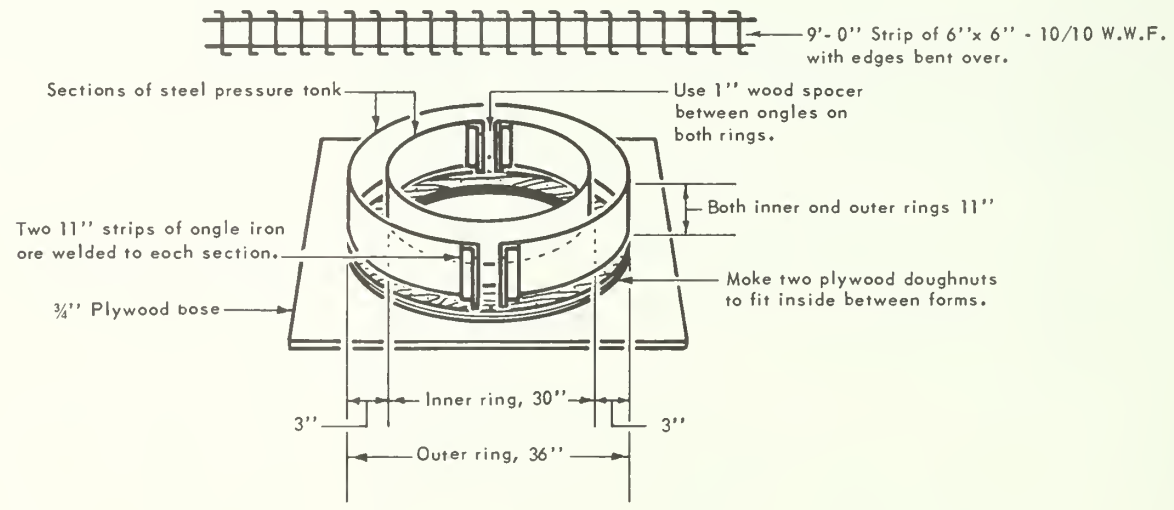
Cut old pressure tanks of desired dimensions. Weld angles at divisions and allow 1" space on inside of ring for stripping form. Use 1" wood spacer between angles.

Cut two plywood doughnuts of correct dimensions and nail to 4' × 8' sheet ¾" exterior.

Set the old forms and metal on plywood doughnut. Clamp angles with "C" clamp or vise grips. Insert concrete wire reinforcing #10—6 × 6, bent at cut. Use 1-2-3 mix, Class A concrete, pouring and tapping sides for vibration.

Approximate cost for this fire ring is $13 as compared to the $35 price for a commercially-made ring.

Park Superintendent John Kohler of Shawnee State Park shared this design with *Grist* subscribers and readers.



FIRE RING FORM FOR CONCRETE

Bicycle Rack

Providing sufficient spaces for bicyclists to park their bicycles was a problem at Hopewell Village National Historic Site (PA). There were too many bicycles for the old single-sided rack, and additional racks or a double-sided rack would have led to unacceptable congestion of pedestrian traffic as the old bike rack was on the Visitor Center walkway.

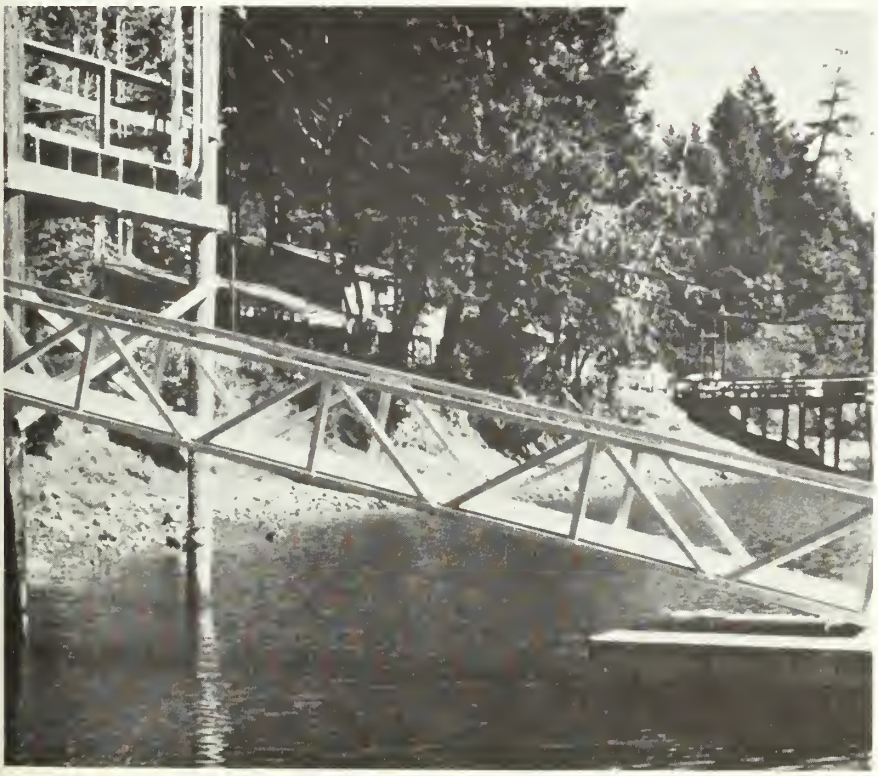
The problem was solved, however, by painting two parking spaces bright yellow for "no vehicle parking." A double-sided bike rack was purchased and placed lengthwise in the middle of the combined parking spaces. A large bicycle symbol sign was fastened to a round piece of plywood to eliminate the safety hazard of the sharp-edged metal. This plywood backing was painted black and the entire unit was mounted on the traffic side of the rack.

Park Superintendent Elizabeth E. Disrude said there have been no problems with this arrangement since bicyclers have ample room and there is less congestion on the Visitor Center walkway. The bicycle rack was placed in the combined parking spaces located directly in front of the Visitor Center. This is convenient for bikers and is a quiet reminder to other visitors of alternate methods of transportation.

Aluminum Ramps

Custom-built aluminum ramps specifically designed for access to floating dock systems installed in reservoirs and tide-affected areas are now available from Topper Industries.

These ramps are a unique blend of light-weight, structural rigidity/strength, and have an integral design feature that make their use particularly appropriate where water-borne docks are raised and lowered by shifting water levels.



Composed of premium-grade marine aluminum, Topper's ramps are of durable welded construction, have 4-ft side railings, and are individually designed and built to accommodate a wide variety of dock and shore conditions.

The ramps are attached at the shore end (to a walkway, stairway, etc.) with a flexible hinge, and have two cast iron wheels at the dock end. The result is a ramp system that raises and lowers automatically with the tides, and smoothly slides forward and backward over a small area on the dock. Whatever height the dock floats up or down to, the ramp freely follows.

Aluminum construction makes these low-maintenance ramps highly resistant to corrosion, and painted protection is unnecessary. An optional roller, runoff plate, and expandable aluminum mesh walkway are also available.

For further information, contact Topper Industries, PO Box 1611, Vancouver, WA 98669.

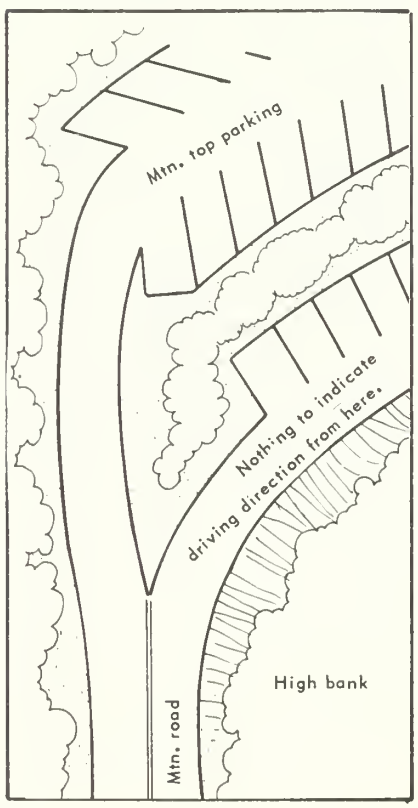
Vehicle Control in Parking Lot

Park Technician Arthur T. Whitehead saw a need to better control vehicles in the parking lot at Kennesaw Mountain National Battlefield Park (GA).

When traffic was heavy on the mountain top, vehicles that parked on the left side of the parking lot's first section sometimes turned around and exited back out on the narrow single lane. There were no signs or traffic arrows to indicate that this could cause a head-on collision with an inbound vehicle coming around the slight curve.

Whitehead suggested painting directional arrows or indicators on the roadway traffic lane to indicate the direction of travel on the single lane portions between the two-way road and parking lots, and using "NO EXIT" signs. Also, Whitehead suggested installing a sign at the Headquarters parking lot entrance near where the closing regulations are posted. This sign would indicate the direction to the mountain drive for the visitors who are not familiar with the area so they may drive on through and not have to hold up other traffic while they make inquiries as to the proper road to use. This suggestion could well prevent a serious vehicle accident at or near the intersection with the mountain road.

Whitehead was presented a $50 National Park Service incentive award for his suggestion.



Visual Inspection of SCUBA Tank Stickers

SCUBA tank cylinders at the Chickasaw National Recreation Area (OK) had to be transported to local dive shops and inspected, at a cost of approximately $2.00 per cylinder, in order to obtain a current Visual Inspection Permit (V.I.P.) sticker.

Park Technician Bill Warren suggests that visual inspection stickers be printed up at the park or regional level. These need only be small, vinyl, adhesive-backed stickers worded to indicate that the inspection has been performed. They could be affixed to all SCUBA or Scott Air pack cylinders owned by the Area after the cylinders have received an annual inspection of the interior of the tank by the Park Diving Officer or his/her representative. This inspection is not required by law at this time, but most reputable dive shops will not fill a cylinder which does not carry a valid V.I.P. sticker.

This suggestion would convey to the public the use of the V.I.P. program as a safety practice and would make park divers more aware of the necessity to inspect their tanks regularly to eliminate the danger of using contaminated cylinders.

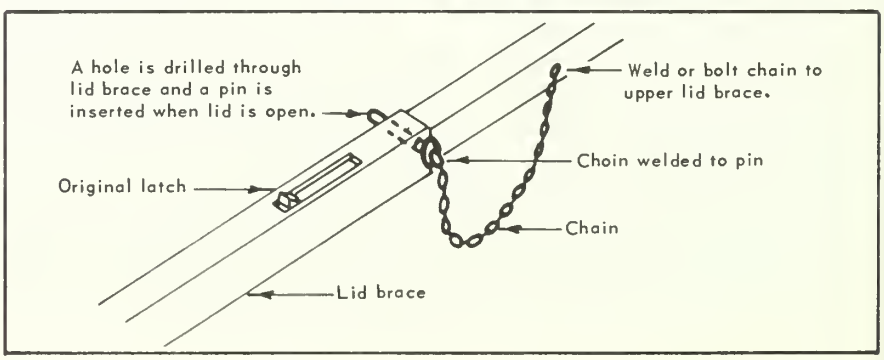
Warren received a $50 National Park Service incentive award for his suggestion.

Securing Tool Box Cover

Keeping a tool box lid cover in an open and upright position was often a problem at Indiana Dunes National Lakeshore (IN). Strong winds would lift the cover up and release the latch catch, causing the lid to fall closed. Any accidental bumping or jarring would also cause the lid to slam shut, occasionally injuring an employee.

Wayne R. French, park technician, devised a method for keeping the lid open and secure. He drilled a hole through the lid brace and inserted a pin to hold the lid open. A chain was welded to the pin and to the upper lid brace to avoid loss. This lid cover pin provides a safe means of access to the tool box.

French was presented a $50 National Park Service incentive award for his suggestion.



National Park Service
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For the Unconscious or Choking Person

The National Naval Medical Center in Bethesda (MD) offers some advice on emergency first aid—breathing and choking.

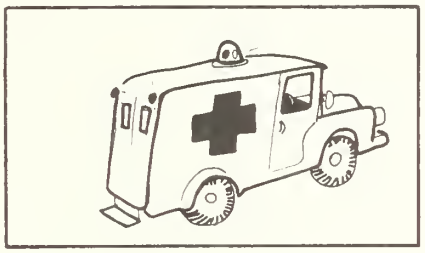
Unconscious Person

Be careful approaching an unconscious person. He or she may be in contact with a live electrical current. If that is the case, turn off the electricity before you touch the victim.

There are hundreds of other possible causes of unconsciousness, but the first thing you must check is whether or not the person is breathing.

The following steps may save someone's life:

1. Try to awaken the person. The victim may be just temporarily dazed.
2. If there is no response, check for signs of breathing.
   A. Be sure the victim is lying flat on back. If you have to roll the victim over, move entire body at one time.
   B. Loosen tight clothing around the neck and chest.
3. Open the airway:
   A. Lift up the neck gently with one hand.
   B. Push down and back on the forehead with the other hand.
   C. Place your ear close to the victim's mouth. Listen for breath sounds, and watch chest and stomach for movement.
   D. If there is any question in your mind, or if breathing is so faint that you are unsure—assume the worst!
   E. Give rescue breathing immediately. Have someone else summon professional help.



4. Give mouth-to-mouth rescue breathing.
   A. Put your hand on the victim's forehead, pinching the nose shut with your fingers, while holding the forehead back.
   B. Your other hand should be placed under the victim's neck, supporting and lifting up slightly in order to maintain an open airway.
   C. Take a deep breath. Open your mouth wide. Place it over the victim's mouth. Blow air into the victim until you see his chest rise.
   D. Remove your mouth from the victim's. Turn your head to the side and watch the chest for a falling movement while you listen for air escaping from the victim's mouth as he exhales.
   E. If you hear air escaping and see the chest fall, you know that rescue breathing is working. Continue until help arrives.
   F. Repeat the cycle every five seconds. Twelve breaths per minute.
5. Mouth-to-mouth rescue for small children or infants:
   A. Be careful tilting a small child's head back to clear the airway. It cannot tilt as far back as that of an adult.
   B. Cover the child's mouth and nose with your mouth.
   C. Blow air in with *less* pressure than for an adult. Give small puffs. A child needs less air.
   D. Feel the chest inflate as you blow in air.
   E. Listen for exhales.
   F. Repeat once every three seconds. Twenty breaths per minute.

It may take several hours to revive someone. Keep up rescue breathing until help arrives to relieve you. Remember you are doing the breathing for the victim. If you stop—so does the victim. In about five minute he or she could be dead. Why not hold a practice session at home, so everyone in your family will become familiar with rescue breathing? A small doll can be utilized to practice proper breathing techniques for infants.

Choking

Anything stuck in the throat blocking the air passage can stop breathing and cause unconsciousness and death within minutes.

1. Do not interfere with a choking victim who can speak, cough or breathe.
2. But, if a conscious person cannot speak, cough or breathe:
   A. Stand just behind and to the side of the victim. Support the victim with one hand on the chest. The victim's head should be lowered. Give four sharp blows between the shoulder blades. If unsuccessful—
   B. Stand behind the victim, wrap your arms around his middle just above the

(Continued on p.2)

Safety

Grist

A publication of the Park Practice Program
The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

Russell E. Dickenson, Director
National Park Service

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Choking . . .

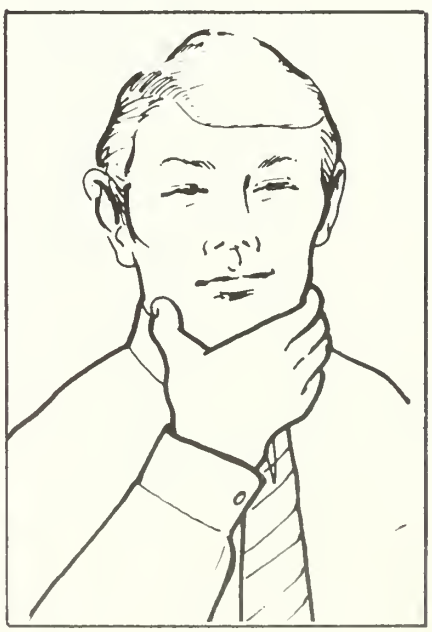
(Continued from p.1)

navel or on the lower chest. Clasp your hands together in a doubled fist and press in and up in quick thrusts. Repeat several times. If still unsuccessful—

C. Make your index finger into a hook shape. Reach down the victim's throat in a sweeping motion, feeling for the object.

D. Repeat the above sequence. Be persistent. Continue uninterrupted until advanced life support is available.

If the object has not been retrieved but the swallower suddenly seems all right, play it safe. Take victim directly to the hospital. This is especially critical if the swallowed object is a fishbone, chicken bone, or other jagged object that could do internal damage as it passes through the victim's system.



Internotional sign thot one is choking.

Physical Examinations

National Park Service management policy concerning wildland fire qualifications requires that all permanent employees receive a physical examination for arduous fireline duty. Bandelier National Monument in Los Alamos, New Mexico, has 13 permanent employees trained and certified for wildland firefighting. Physical examinations for these 13 employees from a local physician would cost $175 per person or a total of $2,275. Additionally, two commissioned law enforcement rangers were required to take physical exams to retain their commissions, another $350.

Park Ranger John Lissoway was responsible for wildland fire positions certification at Bandelier. Realizing the park did not have the funding to pay for these needed examinations, he contacted Kirtland Air Force Base in Albuquerque, New Mexico. The Air Force agreed to conduct the physical exams for $28 per person at a savings of $147 per person, or a total of $1,911 savings for 13 employees.

Lissoway was presented a $150 National Park Service incentive award for his cost-saving suggestion.

Operation

Water Tank Switch

Maintenance Mechanic Jerry L. Wheeler has come up with a suggestion that saves time, energy and water at Bandelier National Monument in New Mexico.

The water tanks at Frijoles Canyon had to be filled during the cold winter months by opening and closing a gate valve on top of the Canyon Rim. This gate valve feeds a 2'' water line which is exposed to freezing temperatures on the Cliff Face. For 6 months each year a person had to drive 3 miles round trip twice each day to turn the valve on and off manually to keep the line from freezing at night. This took approximately ½ hour per day to accomplish and consumed gasoline, water and time.

Wheeler suggested installing an automatic clay valve that would be controlled by two electrodes in the water tank which would automatically shut the valve off and turn it on when necessary.

When the project could not be completed before winter, Wheeler devised a temporary improvement by installing a switch that could control the clay valve from the Power House which is the source of power to the clay valve and is located in the Canyon near the Maintenance Yard and office. By simply turning a switch on and off manually, the water tank can be filled without requiring someone to make the 3-mile trip to the top of the Canyon Rim.

A pipe overflow by the water tank can be seen from the Maintenance Yard which indicates the tank is full. A light located in the Power House is automatically turned on when the clay valve is activated to indicate that the valve is turned on.

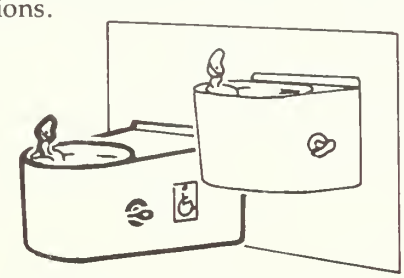
Wheeler estimates a savings of $810 in man-hours (3-mile trip to and from Canyon Rim), $189 in gasoline and $276 in water, minus the labor costs for installing the switch ($41) brings a total yearly savings to $1234.

A $115 National Park Service incentive award was presented to Wheeler for his suggestion.

Lower Water Fountain

The average water fountain is too high to accommodate children and persons in wheelchairs which was the case at the Visitor Center at Fort Raleigh National Historic Site in North Carolina.

During the warm summer months when visitation increased considerably, long lines would form at the one water fountain. Many of these visitors were youngsters who had to be lifted up to the fountain which caused delays for those waiting in line and posed potentially dangerous and somewhat unsanitary conditions.



Park Technician James E. Eldridge suggested installing a lower water fountain next to the existing one. The lower fountain is easily accessible to young children and persons in wheelchairs, and it is hooked up to the existing plumbing which mitigates installation costs and provides better service to all park visitors.

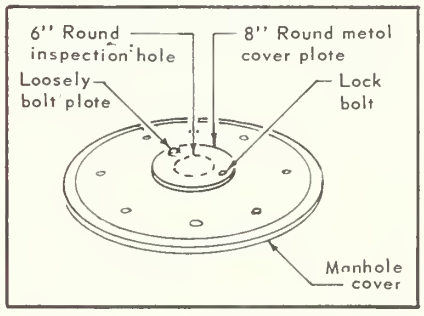
Eldridge received a $25 National Park Service incentive award for his suggestion.

Manhole Inspection

Manhole covers along the mid portion of the sewer line at Carlsbad Caverns National Park in New Mexico, are 4' x 4' x ¼'' plate steel. They are quite heavy and require two persons to safely lift and remove them for inspection and cleaning. Also, the sewer line needs to be inspected biweekly.

Maintenance Mechanic Robert W. Lowe suggested that a 6'' round hole be cut into the center of each cover and covered with an 8'' round metal plate loosely bolted on one side to accommodate a pivot bolt. Drill a 1/2'' hole on the opposite side of the cover for a 7/16'' stainless steel NC thread bolt. Tapping a 7/16'' NC thread directly under the 1/2'' hole would allow for an easily removable locking bolt.

This method would provide a window through which one person could easily inspect the manhole and sewer line as opposed to two persons, saving time and money. It would also reduce the possibility of injury to those persons conducting the inspection.



NOTE: Care should be taken to vent the manholes before cutting the center hole in the cover to prevent an explosion.

Lowe received a $50 National Park Service incentive award for his suggestion.

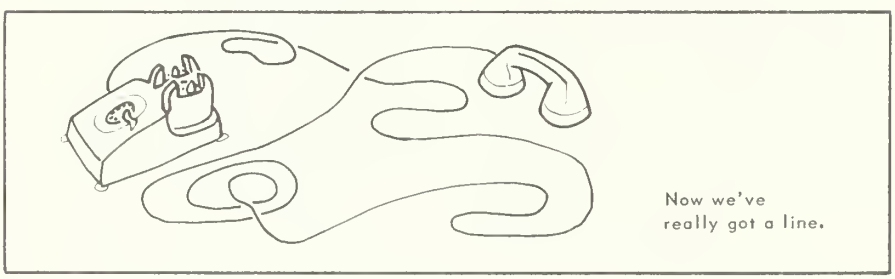
Improving Telephone Inquiry Services

Mrs. Carole Bryant, park aid at Guadalupe Mountains National Park in Carlsbad, New Mexico, has come up with a simple and time-saving method to better serve persons telephoning the visitor center for information.

While working at the visitor center desk, Mrs. Bryant and other park employees often received inquiries about various mileages of trails within the park. Since the source of this information is a map located approximately 5 feet from the phone, the caller was put on hold while the park employee walked over to the map, found the precise information, and returned to the phone. A further question of this nature would require another wait on hold; a time-consuming and potentially irritating process to the caller.

Bryant saw an opportunity to improve visitor services by suggesting that a long cord be put on the desk telephone. This allows a park employee to walk over to the map or to other sources of information located away from the desk, while talking to the caller—a system which is much more efficient and certainly more satisfying to the caller.

A $25 National Park Service incentive award was presented to Bryant for her suggestion.



Traffic Warning Device

A potential hazard existed in an uncontrolled traffic concentration area in the Pine Island Maintenance Area at Everglades National Park (FL). The area between the supply warehouse and the resource management buildings was congested with ranger, resource management and supply vehicles, commercial motor freight carriers, visitors, etc. Considerable pedestrian traffic to and from the buildings added to the problem.

Thomas R. Beasley, supply technician, suggested installing two warning devices to alert vehicular traffic of the potential danger—speed bumps with yellow diagonal lines and a sign at the first corner to alert drivers to slow down and be cautious. Now these warnings are particularly helpful to visitors who are unfamiliar with the heavy traffic patterns of this area.

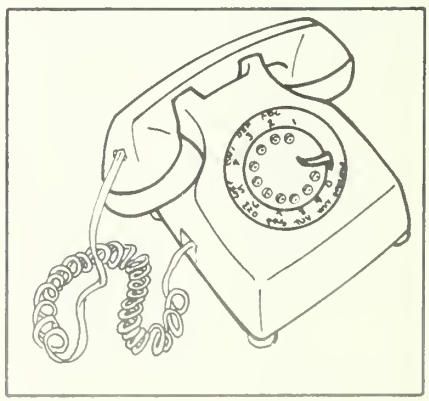
A $50 National Park Service incentive award was presented to Beasley for his suggestion.

Temporary Telephone Service

Guadalupe Mountains National Park in Carlsbad, New Mexico, was paying $25 a month for telephone service for the McKittrick information trailer. This information trailer was occupied only a few days each year. Most communications between park staff in the canyon area and the Frijole and Dog Canyon ranger stations are done through the park radio system.

Maintenance Worker Donald R. Cory suggested discontinuing telephone service at the McKittrick information trailer on a year-round basis. If phone service is deemed necessary for peak visitation times (Spring Break, Easter, Fall Colors) a telephone is put on vacation rates for a considerable dollar savings.

Cory estimates that the park saved $288 per year. He was presented a $30 National Park Service incentive award for his suggestion.



Maintenance

Filter Tubes for Swimming Pools

Park Foreman Gregory L. Roth and Assistant Foreman Dean Corl of the State College (PA) Parks and Recreation Department developed and built their own fiberglass mesh filter tubes for one of their municipal pools.

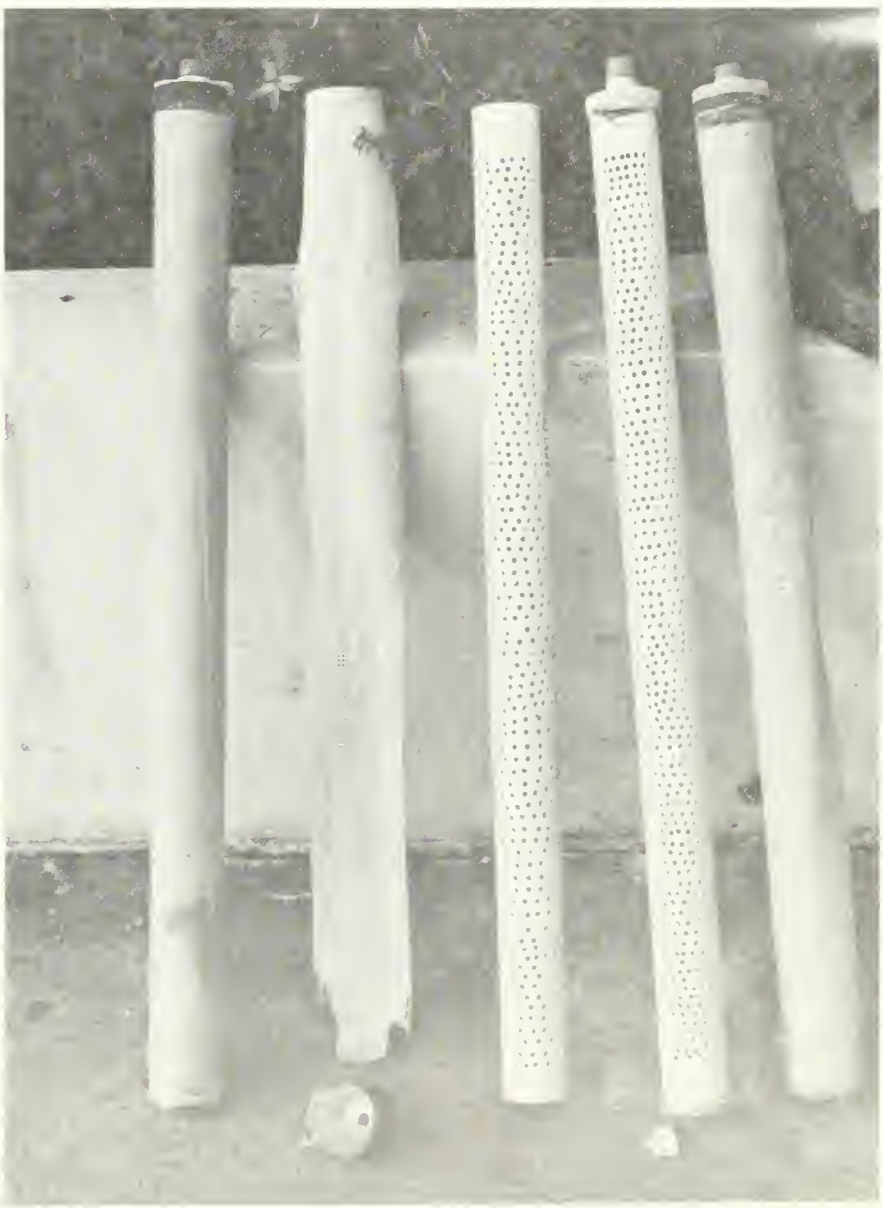
For several years their fiberglass mesh filter tubes collapsed in the diatomaceous earth filter. Some tubes collapsed at different times, probably due to old age. Replacement tubes cost $95 each. When 36 tubes collapsed overnight (out of a total of 200 in the filter), Roth and Corl decided to build their own using the ends and the nylon covers from the old fiberglass tubes.

The new tubes were made of 2'' schedule 40 plastic pipe. Approximately 1000 holes were drilled into a length of 35'' pipe. Then the ends from the old tubes were glued on with epoxy and the old filter tube covers put on. They have worked fine and provide a considerable savings to the department.

The cost breakdown for the new tubes is:

- 1 hour hole drilling time per tube = $3.50/hr. labor
- 15 minutes to glue on ends and put cover on = 88¢
- glue cost = 50¢ tube
- plastic pipe per 3 ft. = $1.32

TOTAL $6.20/tube

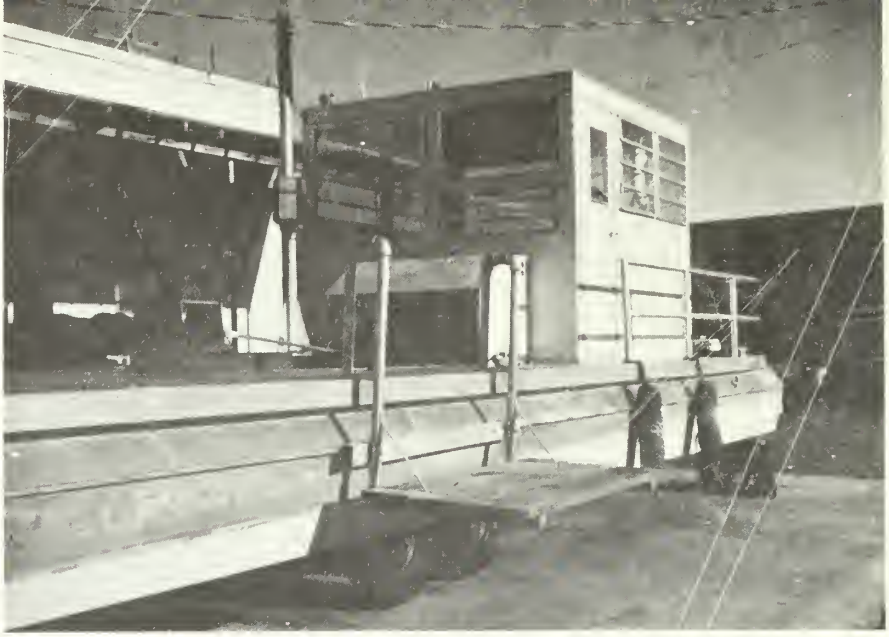


Scuba Diver Platform

Carpenter Allan Pond of Bighorn Canyon National Recreation Area (MT-WY) designed and built this platform for scuba divers' use while entering and exiting the water.

Much of the scuba diving by NPS divers at Bighorn Canyon is done from the maintenance barge. The barge's deck is approximately 3' above the water line, making it extremely difficult for a diver with full gear to get onto the deck. Should the diver be impaired or unconscious, or if the divers should recover a body in the water, it would be almost impossible to reach the deck.

Pond solved this problem by building a portable dive platform which can be connected to the side of the barge. The platform is at the water line and provides divers easy access to the barge when entering and leaving the water. Should a diver be injured surface personnel can use the platform to bring the diver out of the water and onto the barge.



Pond received a $50 National Park Service incentive award for his suggestion.

Grass Mower

Weeds and high grass can easily stall the average lawn mower. However, Clinton Engines Corp. has developed a "Chieftan" mower which will cut through almost any overgrown "jungle."

Powered by a 5.5 hp. two-stroke engine, the Chieftan provides greater cutting output than other comparably-sized mowers, making it ideal for professional, governmental, and commercial use. Yet this mower is easy to transport and use since it weighs only 23 lbs.

With only three moving parts, the 140 cc. displacement engine needs minimum maintenance. Its use of pre-mixed fuel assures lubrication on every stroke, regardless of operating angle.

Standard features include needle and ball bearings throughout the engine, 8 x 1.75 inc. ball bearing wheels that can be adjusted to four cutting heights, a heavy-duty blade clutch, variable speed control, a low tone muffler that discharges exhaust below the deck, and a larger-than-normal 3-qt. fuel tank. The 20" and 22" blade models have safety features

that include a floating rear guard and toe guard on the discharge chute.

For further information, contact Clinton Engines Corporation, Clark and Maple Streets, Maquoketa, IA 52060.

Halyard Help

The halyard on the flagpole outside the Mount Rushmore National Memorial visitor center used to be replaced yearly. Although the 3/8" nylon rope would weather well, the knot securing the top clip onto the halyard was pulled just a little through the pulley whenever the flag was raised. This eventually stretched the rope and wore it thin.

Park Technicians Tom Haraden and Dale Ditmanson, while replacing the halyard last fall, slipped a 1¼" diameter, ½" thick rubber washer onto the rope above the top clip. Now when the flag is raised to the top, the rubber washer takes the abuse rather than the rope and knot. And after a year, the halyard showed no sign of wear.

Dumping Ramp

Hauling refuse out of Grand Teton National Park (WY) was a costly and time-consuming process, especially during peak visitation periods. The refuse had to be hauled to the Jackson Sanitary Landfill (50 miles round trip) in a "Pup Packer." Since the truck had such a low capacity, the trip often had to be made twice a day during the busy season.

Motor Vehicle Operator Dennis L. Sportsman suggested building a ramp which led to a nearby 8-yard dumpster. The Pup Packer's refuse could be emptied into the dumpster, thus reducing the long trips to the landfill and time involved.

Sportsman estimates a savings of:

- 2 manhours per trip (2 persons usually made the trip)
- 2 trips per day during peak periods
- 10 gallons of gas per trip
- 50 miles of vehicle use per round trip.

A $175 National Park Service incentive award was presented to Sportsman for his suggestion.

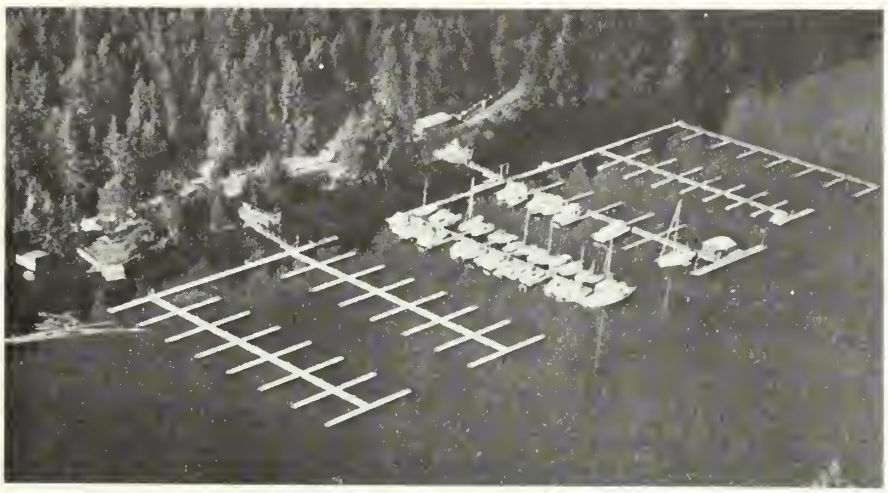
Dock and Marina Systems

Topper Industries, of Vancouver, Washington, recently completed a marina-construction project near Puget Sound. The site for this project was Pleasant Harbor, an exclusive condominium development on Hood's Canal, a particularly pristine area near the Sound. Because the developers wanted to complete a partially finished wood deck system and add new concrete deck walls, floating modular panels were used.

The required number of new finger-pieces were shipped by truck, in 40-ft. sections. The panels are easily installed, and float on old tire casings filled with polystyrene closed-cell foam, a Topper-patented process.

Although ruggedly built, the modular panels are easily replaced if damaged, and galvanized hardware is used in all installations. Flotation, guaranteed for 25 years, is attached to the modular panels with corrosion-free nylon straps.

Topper Industries (PO Box 1611) is located in Vancouver, WA 98663.



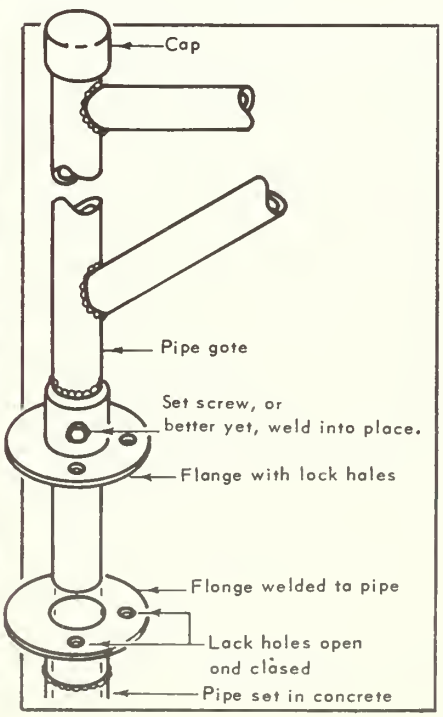
Utility Gate Post

Maintenance Mechanic Jim Bruns of Fort Caroline National Memorial in Florida designed this simple steel gate and post.

The gate and post are made from standard size pipe that fits into a sleeve made from the next larger size pipe and set in concrete. The two flanges can be locked together to hold the gate open or closed.

NOTE: The Editor recommends welding the top flange firmly after deciding the proper height.

Occasionally this type of gate swings out into the road when it is unlocked and it's possible to run an automobile against it, running the gate pipe through the windshield and rear window. This gate must always be locked either open or closed.



Vault Toilet

An almost totally odor free vault toilet was designed by John Day Fossil Beds National Monument (OR) using the convection suggestions from the U.S. Forest Service study for vault toilets.

Four of these toilets were built at John Day using a concrete tank, constructed in place, with an opening in the lid of the tank for the two waste holes—a vent hole and a 2′ x 2′ entrance hole to the tank. The inside of the toilets are preconstructed fiberglass liners. Two of the toilets are standard size and two are of handicapped size.

The buildings housing the toilets are wood frame with board and batten rough sawn lumber siding. The walls are insulated with R-11 foil faced insulation sheeted inside with ½″ AC plywood and outside with ½″ CD plywood. The ceilings are constructed of 2″ x 6″ ceiling joists sheeted with ½″ AC plywood. The roof is constructed of 2″ x 6″ rafters sheeted with ½″ AC plywood covered with 15 pound felt, and sheeted with dark brown metal roofing.

These toilets are odor free on warm days. However, on cooler days the convection is not as good and occasionally some odors are present.

Our thanks to Maintenance Mechanic Leader Robert W. Trodahl at John Day Fossil Beds NM for sharing this information with *Grist* readers.

National Park Service
U.S. Department of the Interior
and
National Recreation and
Park Association

GRIST

Spring 1983
Volume 27/Number 2

A Little Recognition Goes a Long Way!

The staffs in most agencies and organizations are leaner these days, yet the workload has not decreased. Employees must be more efficient to accomplish their organizations' mandates. Keeping employees motivated and productive is a prime concern for many managers.

An underutilized and often overlooked method of motivating employees and improving their productivity is through an awards system. Behavioral scientists state that the principal factor that helps create highly productive and satisfied workers is recognizing and rewarding effective performance in a way that is meaningful to the employee.

Federal agencies use cash incentives and bonuses to recognize and encourage superior performance. Through the Incentive Awards Program, Honor Awards, Special Achievement, Special Act or Service, Quality Increases and Suggestion Awards are available to Federal employees who have demonstrated performance above that required for the job, or who have submitted suggestions or inventions that improve or contribute to the economy and efficiency of operations, or directly increase the effectiveness of the Government.

Fairfax County, VA

Fairfax County in Virginia presents Unusual Merit Increases to deserving employees. The Fairfax County Park Authority (FCPA) in Annandale, Virginia, recently initiated an energy conservation

(Continued on p. 10)

The Fairfax County (VA) Park Authority established its 'Park Power' awards in 1981 to recognize exemplary energy management efforts by staff members. Honored the first year were: the Maintenance Div. for vehicle fleet management; Wakefield Recreation Center and Riverbend Interpretive Center for facilities management; and Louis A. Cable, Assistant Director (second from left) for program support. Pictured with Cable (left to right) are Irvin Poole and Bill Hellwig, district maintenance supervisors; George Sachs, Wakefield Park manager; Leon Nowajchik, naturalist at Riverbend; (kneeling) Bobby Royce, maintenance division superintendent, and Snap Shifflett, district maintenance supervisor.

Dear Subscribers and Readers of GRIST:

Beginning with this second issue, Spring, 1983, GRIST will be published as a quarterly (4 issues per year) instead of the previous 6 bimonthly issues. Each quarterly issue will consist of 12 pages of time-, cost-, and energy-saving ideas, instead of the previous 8 pages.

This change will continue to provide our subscribers and readers with the same amount of helpful material contributed by experts who have devised easier and less costly methods for getting their jobs done. It will also bring GRIST into conformity with the quarterlies TRENDS and DESIGN, the other components of the Park Practice Program. Lastly, this change will help reduce mailing costs.

We sincerely appreciate your interest and support over the years and we hope you will continue to share your ideas to benefit the practitioners within the park and recreation community. Support GRIST by sharing an idea!

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awards recognition program to encourage continuance and momentum in their pilot program of energy conservation.

These "Park Power" awards include four categories: Facilities Management in the county-wide park system; Facilities Management in district parks and historical sites; Vehicle Fleet Management; and Program Support by an individual, division, project/project team, or public education effort. The initiation of this awards program resulted in a significant reduction in electrical and fuel oil consumption, and the FCPA attributes staff awareness as a key to this success.

The Park Power Awards consist of a plaque which is presented at an annual awards ceremony before the Fairfax County Park Authority Board.

M-NCPPC

The Maryland-National Capital Park and Planning Commission uses Special Achievement Awards, Chairman's Awards and Service Awards to recognize and motivate its employees. In 1980, 49 of the 1,276 employees that were evaluated received Special Achievement Awards. In 1981, 61 employees received these awards and 33 in 1982. The non-monetary Service Awards are presented for length of service and are given in 5-year increments. These Service Awards also include an employee's choice of a piece of jewelry.

NSPR

The National Society for Park Resources (NSPR), a branch of the National Recreation and Park Association, has a special awards program for GRIST contributors. All material that is published in GRIST is reviewed annually and three "Best of GRIST" awards are presented each year by NSPR. The presentation is made at the National Recreation and Park Association's annual Congress held in October of each year in various cities across the country. (See "Best of GRIST" awards elsewhere in this issue.)

Many persons feel that having their time-, cost-, or energy-saving ideas or developments published in a GRIST issue is recognition in itself. GRIST is read by thousands of park and recreation employees throughout the United States and in foreign countries as well, and helping someone to make his or her job easier is a rewarding experience.

Many GRIST contributions arrive via the Incentive Awards Programs in various Federal agencies. Managers and supervisors are encouraged to share their employees' ideas and suggestions, as well as their own, with GRIST readers.

Conclusion

Some park and recreation agencies experienced reductions-in-force in recent years, and the number of cash awards has sometimes been reduced or eliminated altogether. Often, the money that might have gone for awards was instead used to fund a position.

However, the presentation of a certificate of achievement or a letter of commendation to recognize an employee's extra efforts or accomplishments costs little, yet decidedly provides benefits to the employee and to the agency's operations through higher employee productivity. A little recognition does go a long way!

Maintenance

Water Impoundments: Controlling Algal Growth

The National Park Service's National Capital Region (NCR) has been using dyes in a number of small ornamental ponds and reflecting pools for purposes of aesthetics and for controlling certain aquatic growths. By darkening the water the growth of algae in the water is partially arrested because less light reaches into the water. The dyed water proves less inviting to park visitors inclined to wade in such water bodies because it obscures the view of the bottom. It also masks the presence of sunken litter (beverages, etc.) until they can be routinely removed.

A powdered but insoluble nigrosine dye had been used before which, while effective, would in time settle out and thus require frequent re-treatment of the ponds. (Nigrosine dye is an inert material that in the quantities used, is benign.)

Aside from the basic aesthetic considerations, a major reason for the utilization of dyes has been to reduce to a minimum the need for periodic draining and cleaning of the water bodies maintained by NCR. These pond maintenance chores have proven to be very expensive. Pond cleaning often is necessitated by the presence of excessive filamentous algae and trash.

In the Fall of 1982, the lake in Constitution Gardens (Washington, DC) was treated with a combination of two soluble dyes: acid blue #9 and acid black DCJ: 90% black to 10% blue. The actual amounts used were 18 lbs of acid black and 2 lbs of acid blue. The quantity of water in Constitution Gardens Lake is about 5.5 million gallons with a depth ranging from 18" at the shores to about 30" in central locations.

To implement quick and cost-effective ways to introduce these dyes into the water, the total amount of both dyes was put in the reservoir of a high-pressure pumper truck. Once the dyes were in solution the output nozzle of the pumper truck hose was used to spray the dye over the water body to quickly achieve uniform dyeing of the water.

This mixture provided a dark appearance suggesting considerable depth of the lake water and the amount of blue present was not unlike that associated with large deep-water lakes. While the right ratio of black to blue obviously involves subjective values, it was generally felt that the tested ratio produced the desired aesthetic appearance. As of this writing (February 1983) the dye appears to

(Continued on p.12)

be remaining stable.

It is anticipated that NCR will still want to stock and use the previously-used insoluble nigrosine dyes for use when special circumstances call for temporarily darkening pool waters beyond normal levels for further arresting algal growth or for related therapeutic purposes. Under these conditions the added nigrosine dyes will soon drop out of solution—leaving the basic continuing darkened condition afforded by the soluble acid dyes that were put in earlier.

For further information, contact John Hoke, Division of Resource Management and Visitor Protection, National Park Service (NCR), 1100 Ohio Drive, SW, Washington, DC 20242.

Tree Vandalism

Protecting the trees at the Sims Mesa Site of Navajo Lake State Park in New Mexico is an often difficult task. Despite the signs posted throughout the area asking visitors to refrain from cutting or tearing off branches from the pinon and juniper trees, vandalism continued. When a person was caught tearing off the green tree branches, a citation was written up and sent to the local magistrate judge.

Park Manager Richard C. Brooks and the judge recently came up with another way to deal with the vandals. The guilty defendant is asked to buy an evergreen tree, from 4-5' tall, and bring the tree to the park, along with a receipt stating where the tree was purchased. This method has made people more aware of the damage they have caused by tearing or burning the green trees and they are literally "paying" for their damage.

Bolt Puller for Picnic Tables

Picnic tables throughout the Michigan State Parks are taken apart each year to be refinished or to have broken and damaged boards replaced. Park maintenance personnel had to pull the bolts that hold the boards to the base. This was mostly accomplished by using a wrecking bar.

This operation had always been difficult and time-consuming because it required using at least two different size blocks under the bar to get the bolt all the way out. It was difficult to get the bar to grip the bolt or to get the bolts out without bending them.

Ronald McMurray, Manager of Tawas Point State Park (MI) knew there had to be an easier method of pulling the bolts. He devised this bolt puller which takes much of the work out of this task. The puller removes the bolts without bending them (which saves money) and reduces the time involved by as much as 75%.

The puller was made from material already on hand so there was no cost involved. The channel iron used was 5" but could be 2" or 3" and work just as well. A piece of oak was put under the steel plate to prevent damage to the table. It is designed to pull 5" bolts but could be modified to pull longer bolts if necessary.

A shallow depression was made in the middle of the loop that hooks under the bolt head with a large drill bit to prevent the bolt from slipping out.

Grab-Stick

Picking up litter strewn about an area is a time-consuming task. Concept Engineering, Inc. has devised the Grab-Stick which helps make this task easier and faster to perform.

The Grab-Stick has a wide range of pick-up jaw opening with easy finger tip power control. It picks up tiny objects as well as large, i.e., matches, cigarette butts, bottles, cans, etc. It's rust-proof and works well under water or in wet weather. It's also sturdy but weighs only 12 ounces, and can be used by many handicapped persons.

For further information, contact Concept Engineering, Inc., P.O. Box 6506, Santa Rosa, CA 95406.

Locating Electrical or Mechanical Failures

Locating an electrical or mechanical failure can often be a time-consuming task, especially at the Gateway Arch of the Jefferson National Expansion Memorial National Historic Site in Missouri. When a failure did occur, a visual inspection of relays and limit switches, located anywhere from the lower load zone to the observation deck, or on the trams of the Arch, had to be undertaken before the failure could be localized.

Maintenance Mechanic William E. Dohrn suggested that neon indicator lamps be installed in various control and safety circuits on each tram to indicate or localize electrical and mechanical failures. These indicators were placed in the following circuits: (1) tail sheave limit, comp. ropes; (2) tail sheave limit, governor ropes; and (3) capsule safety circuits.

Dohrn points out that the indicators are not meant to replace the technical skills of good trouble-shooting practices. With the first and third indicators installed, trouble-shooting time could be reduced by half or more. This would allow a mechanic to spend more time concentrating on the areas where the actual trouble exists. To a tram passenger, this could mean the difference between a terrifying experience of being trapped on the tram, or a slight inconvenience if the tram stopped for only a few minutes.

This project involved approximately $60 worth of materials and 36 man-hours of time, and can be used in other situations as well.

Dohrn received a $145 National Park Service incentive award for his suggestion.

Fire Extinguishers

Fire extinguishers require two hands to be put into operation—pulling pins, reading directions, etc. This presents only minor problems when there is adequate light. However, serious difficulties can occur when the extinguisher has to be used in darkness or when electrical power cannot or should not be used.

Park Rangers Stanley R. Robins of Acadia National Park (ME) and Roger Rudolph, now stationed at Crater Lake National Park (OR) suggested providing certain extinguishers with a light source, particularly those in park residences, and in park emergency equipment. Resident extinguishers should have a glow-in-the-dark patch for easy location. A chemical lightstick can be taped onto the flexible hose and when needed, the lightstick is bent, illuminating the extinguisher and surroundings. Even if not used on a fire, the extinguisher could be used to light the way to safety.

Extinguishers in patrol and fire vehicles should have a two-cell flashlight taped to the hose. Park personnel using the extinguisher would use the light to best advantage when responding to fires.

Robins and Rudolph shared a $25 National Park Service incentive award for this suggestion.

Multi-Use Signs

Whenever a special event, problem or hazard existed at the Chickamauga and Chattanooga National Military Park (GA-TN), the park personnel undertook a constant and repetitious patrol to alert and/or inform the numerous park visitors of the specific event, problem or hazard.

Park Technician Jerry H. Davis eliminated this time-consuming task by suggesting that six 14" x 21" interchangeable and multi-use placards or signs be constructed and placed in key locations for the park visitors' information and protection. Being portable, the signs may be removed when the special event has ended or the hazard has been alleviated. Being interchangeable and thus, multi-functional, the signs may be used to fit a variety of purposes and situations, thus reducing the need and expense of constructing "one-purpose signs." Also, the signs free park protection personnel, especially during busy periods, for other work and concomitantly reduce gasoline consumption which results in energy savings.

Davis received a $50 National Park Service incentive award for his suggestion.

Indoor Multipurpose Floor Coverings

The Department of Recreation and Park Administration of Clemson University produces *Extension Reports*, a publication designed to assist South Carolina leisure service directors in solving long-term problems, purchasing equipment or supplies, managing a leisure agency or simply giving the reader additional resources to keep him or her informed on a variety of issues.

Report No. 6, Indoor Multipurpose Floor Coverings, was prepared by Assistant Professor Brian J. Mihalik and Graduate Assistant Lewis Green. This 12-page report examines 14 different types of floor coverings primarily used in indoor facilities.

While the report does not make any recommendations regarding one product over another, the provision of the product's description, advantages, disadvantages, maintenance requirements, local users, supplier, and technical data help readers make the selection of an indoor floor covering best suited to their needs.

The floor coverings reviewed are:

- Dex-O-Tex I & II
- Tartan
- Chemathane
- Granwood
- Chemturf
- Sport-Tred
- Robbins Lock-Tite and Strip-Tite
- Robbins Permacushio
- Robbins Ironbound
- Robbins Cincinnati Portables
- Linoleum
- Carpet

Copies of this report are available from:

Brian J. Mihalik, Assistant Professor, Recreation and Park Administration
263 Lehotsky Hall
Clemson University
Clemson, SC 29631
Telephone: 803-656-2231

Cost is 72¢ which includes postage.

Pedal Boat

This new Pedal Boat provides what may be the safest water sport available, in a boat that's virtually impossible to swamp or tip.

Outfitted with positive foam flotation in twin hulls, the combination has created a recreational craft with stable buoyancy and the ability to safely carry four passengers.

The Pedal Boat is propelled by a double set of pedals, simultaneously operated by two passengers, which easily turn the direct-drive paddlewheel. Even a child can provide the necessary leg-power for forward or reverse momentum.

Built for durability, the Model 120 is constructed of corrosion-resistant marine fiberglass, and the first fiberglass layer on the twin hulls is hand-laid, for a consistent finish and even thickness throughout. The steering tiller and pedal cranks are chrome-plated, and the steel paddle wheel, rudder, and connecting hardware are all cadmium-plated.

The Pedal Boat features four bucket seats, slip-proof vinyl decks, mooring eyes fore and aft, hull-drain plugs, self-bailing pedal wells, side hand rails, and a rear seat center hand rail. The boat also comes in a Deluxe version that offers vinyl-texture seats, four recessed beverage holders, and a below-deck lockable storage compartment.

This model optionally features fore and aft chrome-plated swim rails, vinyl fold-down canopy, and a canvas storage cover. The Model 120 is available in four non-fading colors: white, yellow, orange, or blue.

From Ayr-Way Industries, Inc., PO Box 426, Kendallville, IN 46755.

Emergency

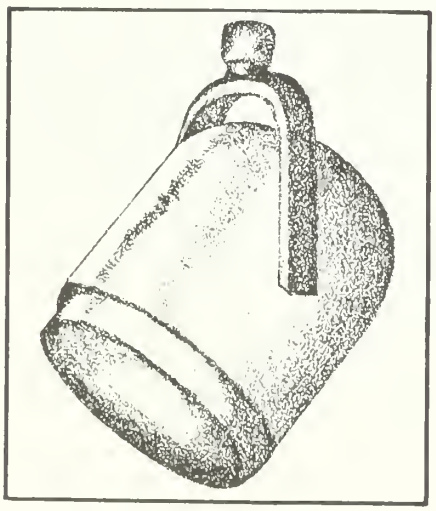
Emergency Lighting

Park Ranger William F. Van Cott of Carlsbad Caverns National Park in New Mexico came up with an idea to help provide a safer environment for visitors and park employees.

Although the visitor center had an emergency generator to provide light in case of power outages in the building, it takes quite a few minutes before the generator can be put on the line to restore power to the visitor center lighting system. Van Cott was concerned about a law which requires spontaneous emergency lighting being available for power outages in buildings used by the public.

He suggested adding battery operated emergency lights in the visitor center lobby, restrooms and the stairway to the observation tower. These battery operated lights will provide immediate emergency lighting for the visiting public and will also protect the government from possible tort claims.

A $25 National Park Service incentive award was presented to Van Cott for his suggestion.



Recycling

Recycling Used Oil

The National Park Service's Rocky Mountain National Park auto shop staff used to dump the used oil from the 157 licensed vehicles into barrels and store it outside, where a small portion was used by the Roads operation.

Heavy Mobile Equipment Mechanic Guy S. Harrison suggested saving all the engine oil when scheduled maintenance was done until they had approximately 55 gallons. They then filtered the oil through two 5-micron filters and dumped it back into the underground holding tank. This process improved the quality of the fuel and eliminated the need to purchase an extra 55 gallons of fuel at approximately 85¢ per gallon. (The filtered oil can be safely mixed into the fuel oil at a rate of up to 20%.)

The equipment used was:

- two filter cannisters at $63 each
- two filter elements at $6.19 each
- one pump capable of creating enough pressure to overcome the two 5-micron filters—locally acquired—expense low.
- one 55-gallon barrel
- one pressure hose capable of holding approximately 200 lbs. pressure
- one low pressure hose to transfer oil to fuel tank.

Harrison's idea was implemented in March 1980 for a one-year trial period. It is still being used, however, and Harrison hopes to purchase a regular blender that will blend the fuel and oil together better to keep it in suspension.

A $200 National Park Service incentive award was presented to Harrison for his suggestion.

Manual for Recycling Used Oil

The American Petroleum Institute (API) has published a manual that offers details for the collection and recycling of used motor oil aimed at the Do-It-Yourselfer (DIY) who drains and changes his or her own automobile oil. DIYs generate some 190 million gallons per year of used oil, according to API, and most of that is being disposed of in an environmentally unsatisfactory manner.

Used oil has high energy value and should be recycled. It can be rerefined into good lubricating oil, or used as a feedstock in the manufacture of other products. Additionally, it can be reclaimed or reprocessed to clean fuel oil or blended with heavy fuel oil and burned safely.

API's booklet, "Recycle Used Motor Oil," includes a clear presentation of the strategy needed for a successful collection and recycling program, tricks of the trade in establishing a community education program, and a discussion of collection and incentive techniques for implementing a used oil recycling program.

For a copy of this booklet, write to the American Petroleum Institute, Marketing Department, 2101 L Street, NW, Washington, DC 20037. Price: 35¢ per copy (quantity discounts available).

Visitors Considered

Photo Display

Thomas W. Lucke, Chief of the Environmental Coordination Division in the National Park Service's Southwest Region (Santa Fe, New Mexico) suggested displaying photographs of each of the Southwest Region's Regional Directors in the lobby of the main NPS office building to better inform employees and visitors to the building of those persons who were responsible for the day-to-day operations and management of the NPS units within the Southwest Region. Beside the photographs would be a brief biography of the individual to include each Regional Director's main contributions to the region.

Lucke's suggestion is a way to honor and commemorate the present and former Regional Directors who have guided and influenced the Southwest Region over the years. It also will help to inspire young employees and develop an esprit de corps among the staff—here are individuals that they know, recognize and can emulate. Further, since many Regional Directors have close ties to the Southwest area, the display would serve as a reminder of the long and involved history of the Southwest and the National Park Service.

A "Certificate for the Contribution of a Beneficial Suggestion" was presented to Lucke in September 1982.

Information Sharing for Interpreters

Park Technician Douglas A. Buehler of Carlsbad Caverns National Park (NM) realized that much valuable information was being lost each year when the seasonal interpreters' appointments were up and they left the park. All of the experiences they had and the individual interpretive techniques they developed to provide quality interpretive services to the visiting public were gone since many seasonals did not return to these positions the following year.

Recognizing that new full-time and seasonal interpreters could well benefit from this source of information, Buehler suggested that a special "Seasonal Interpretive Technique Sheet" be developed and presented to each seasonal interpreter on the last day of employment. The employee would be given sufficient on-duty time to fill out the sheet which asks for the interpretive techniques the employee developed and used that were most successful. These worksheets would be reviewed by a permanent staff member during the off-season, placed in a naturalist activity workbook and be made available to new interpreters as part of their training program.

Through Buehler's suggestion, seasonal interpreters could derive a sense of involvement in the park's interpretive program by contributing their special interpretive techniques for the benefit of the visitors and the staff as well.

A $25.00 National Park Service incentive award was presented to Buehler for his suggestion.

SEASONAL INTERPRETIVE TECHNIQUE SHEET

NAME:

CREW:

DATE:

The purpose of this sheet is to document your suggestions of what interpretive activities have worked successfully for you this season. Your suggestions will be carefully reviewed and a naturalist activity notebook will be developed from the suggestions. This notebook will help new seasonal and permanent employees at the beginning of their employment. It will also be a way to establish ongoing documentation of successful interpretive techniques as they specifically apply to the interpretive program at Carlsbad Caverns National Park.

Describe three interpretive techniques that you thought were especially effective this past season. They can be concerned with any area of interpretation you have been involved with. For example: Bat Flight, Nature Walk, Top-of-the-Cross Talks, New Cave, special activities, or any others you might think of. Please make the descriptions as brief and to the point as possible.

1.

2.

3.

Administration

An Office Procedure

Mrs. Gertrude F. McBride, clerk/typist with the National Park Service's Midwest Regional Office in Omaha, NE, has made her job a little easier and more efficient by eliminating a log-in process.

Requests for Personnel Actions (SF-52's) were being logged in by pay periods on an alphabetical list. The log consisted of 1 or 2 pages for each of the 26 letters of the alphabet and each pay period had approximately 48 pages. The log-in process was time-consuming and research was often required when the SF-52 was missing pertinent information.

Mrs. McBride suggested reminding the field areas to send in the required 3 copies of each SF-52 they submitted. She placed the third copy of the SF-52 in a 3-ring binder by pay period and in alphabetical order. This step eliminated the need to log each SF-52 in on a log sheet and it provides a complete record of each case for review when needed.

Mrs. McBride was presented a $63 National Park Service incentive award for her suggestion.

Correcting Exams with Computers

Correcting examinations given at the Federal Law Enforcement Training Center in Brunswick, GA, was a time-consuming project, taking one instructor approximately 4-5 minutes to correct each exam paper.

Police Officer/Instructor Joseph Donald Maimone suggested using the center's computer to accomplish this task. Each exam can now be corrected in 15 seconds or less by the computer. In addition, the computer system is able to show how many students missed any one question and in what percentage they fall according to score with the total class.

The computer would further assist the staff and instructors in determining the validity of any questions as to whether the material was covered or not. This additional information provided by the computer (which can be computed in 15-20 minutes depending on the class size) would enable the individual instructors to review the class lesson plans more quickly and make necessary adjustments as required at a glance. Also, this computer information would assist the entire training staff in recording class averages, educational progress as to future class material and the development of lesson and lecture material. Lastly, the material would assist management in determining how the class standings are developing, what areas of study the classes as a whole are weak or strong in, and help guide studies in those particular areas.

Maimone received a $25 National Park Service incentive award for his suggestion.

Streamlining Backcountry Camping Registration

The only map that existed in the Grand Teton National Park visitor center was a large topographic map on the desk in the permits office. A visitor seeking a copy of backcountry camping zones had to obtain a park map and draw the zones on the map himself. This created a "traffic jam" in the small permits office or created tie-ups at the main information desk.

Mrs. Blair R. Hoyle, Seasonal Park Technician/Dispatcher, suggested printing some tear-off "locator maps" or a special park folder with an overlay showing these zones. Potential backcountry users could obtain these by mail when planning their trips. Those that arrive at the visitor center could obtain a copy at the front information desk (or the permits desk) and plan their trip before entering the permits office.

Also, each morning a copy of the map could be marked with information concerning the camping areas most likely to be available and left at the front desk. This information could be quickly provided to any visitor wishing a backcountry permit. A copy could also be posted on the outside bulletin board in front of the visitor center and marked each day with those zones filled for the following day.

Mrs. Hoyle's suggestion reduces the correspondence with potential backcountry users who are not familiar with the Grand Teton NP registration system. It would enable potential backpackers to plan their own trips, rather than relying on the permits personnel to do so, and it would help eliminate congestion at the permits office and information desk.

A $25 National Park Service incentive award was presented to Mrs. Hoyle for her suggestion.

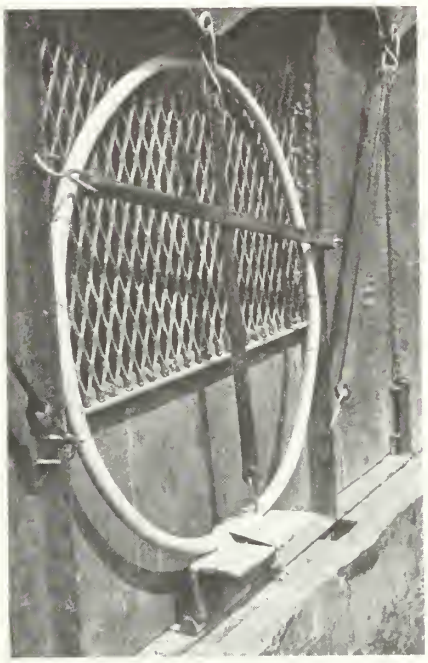
NSPR "Best of Grist" Awards

Each year the National Society for Park Resources (NSPR) presents 3 awards for the best contributions to GRIST. These certificates and cash awards are conferred at the NSPR banquet held each year at the National Recreation and Park Association Congress. The winners for the July 1981-June 1982 period are:

First Place Award ($75)

"Save Labor and Plastic Bags"
by James H. Harter

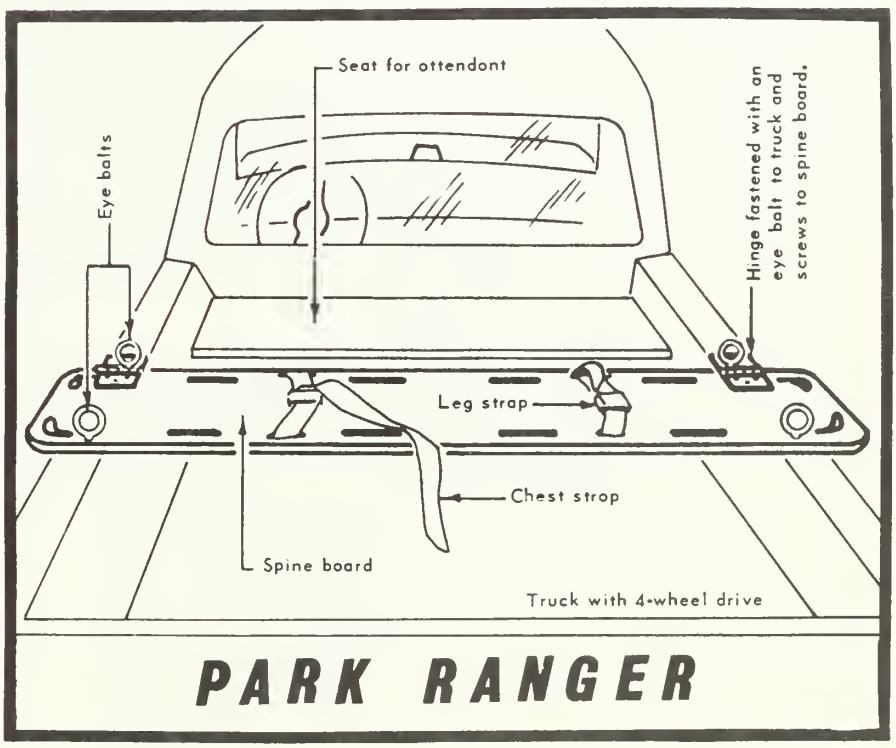
Harter, park manager of Michigan's J.W. Wells State Park, developed a simple hoop to attach to the back of a truck. This hoop holds a plastic bag-lined wire trash container which facilitates trash pickup, saving manhours and plastic bags. Harter's article appeared in the Sep/Oct 1981 issue of GRIST.



Second Place Award ($50)

"4-W Spine Board"
by Craig Carpenter

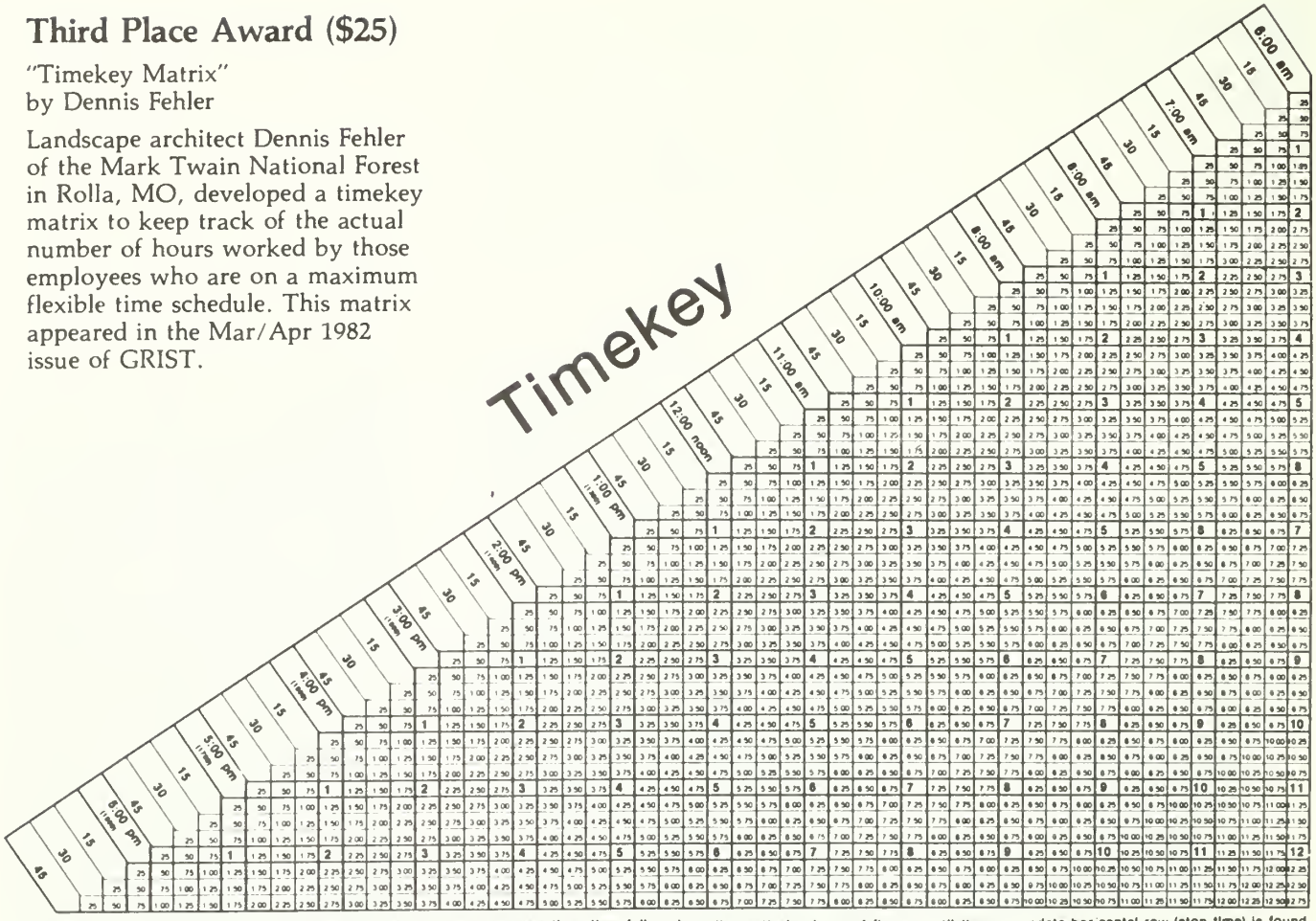
Safety Technician Carpenter (Cascades Young Adult Conservation Corps Center, Sedro Woolley, WA) adapted and improved upon an idea which appeared in an earlier issue of GRIST. When transporting an injured person in a 4-wheel drive vehicle, Carpenter suggested using a hinged spine board to enable the victim to be turned on his or her side in case of vomitting. This idea also appeared in the Sep/Oct 1981 issue of GRIST.



Third Place Award ($25)

"Timekey Matrix"
by Dennis Fehler

Landscape architect Dennis Fehler of the Mark Twain National Forest in Rolla, MO, developed a timekey matrix to keep track of the actual number of hours worked by those employees who are on a maximum flexible time schedule. This matrix appeared in the Mar/Apr 1982 issue of GRIST.



USE OF TIMEKEY MATRIX: To find the hours worked, select the start time, then follow down the vertical column of figures until the appropriate horizontal row (stop time) is found. This intersection indicates hours and hundreths of hours. (e.g. 2.75 = 2 hrs. & 45 mins. or 2¾ hrs.)

Bob Espeseth, President of the National Society for Park Resources, and Bill Forrey, immediate past president, announced the "Best of Grist" Awards at the NSPR banquet in Louisville (KY), in October 1982. They also mentioned that the amounts for next year's awards will be increased to: First Place—$200; Second Place—$125; and Third Place—$75.

NSPR Board of Directors meeting, Louisville, Kentucky, October, 1982.

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The Sounds of our Parks — A Resource We Can Give to the Visitors

By John Hoke

Back in 1970 this writer did a short tour of duty serving as a Watch Director at the Tektite II mission on St. John in the Virgin Islands National Park. This program was part of the Man-In-the-Sea program jointly conducted by several agencies of the government.

The task of Watch Director was shared by a four-man team (all on loan from their various Department of the Interior agencies). The 'hard' shifts (such as the midnight to eight AM 'graveyard' shift) were rotated on a schedule, but each shift was only eight hours each day, per man. This left the balance of each day for sleeping and recreation.

Each of the 'watch', on off hours, did his thing to his own tune. Some spent time in the water — diving into the coral gardens below, or just basking in the tropic sun. Others prowled the island; hiking, taking pictures, nature-watching, or what have you. Some fled to nearby Charlotte Amalie (on St. Thomas) for more urban pleasures. This writer did a lot of these things but as the tour of duty was for eight weeks, some of these avocations 'wore out', and one late dark night found him sitting on the beach at Little Lamashur Bay, looking at the stars — and listening to the night noises screaming out of the vegetation on the hillside behind the bay.

Nighttime seemed to be the active time for 'most every frog and insect' that lived there. The

(Continued on page 22)

Edward and Larry Hoke making a stereo recording of light surf at Cape Hatteras National Seashore.

Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

Russell E. Dickenson, Director
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The Park Practice Program includes: *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a quarterly publication on practical solutions to everyday problems in park and recreation operations including energy conservation, cost reduction, safety, maintenance, and designs for small structures; *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and a library of back issues arranged in binders with indices, and all publications for the remainder of the calendar year.

The initial membership fee is $105; annual renewal is $45. A separate subscription to *Grist* is $20 initially, and $12 upon renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

Sounds of Parks

(Continued from page 21)

thought occurred to this writer that 'souvenirs' of this place ought to include this, too. He hurried back up the dark country road to Base Camp, and brought back a small battery-operated portable stereo cassette tape recorder that was otherwise used to play music during long periods of idle time up in the Command Van, during nighttime watch shifts.

Back on the beach the recorder's two mikes were set at the best angles for picking up both the light 'wash' sound of the bay water flowing over the sand at tide's edge and the nightlife animal sounds coming down off the hills. This was tricky to do, in total darkness — if a light were used the sounds of life nearby ceased, so doing it all in the dark was a necessity. The machine was turned on for five minutes. . . .

This operation was repeated over the next several weeks at many sites on the island — and mostly at night — and the total roster of recordings came to include takes of more water noise, often with gulls and other bird cries included, differing night noises deeper in the park's stand of vegetation, soft wind noise — blowing through hillside stands of grass — and even included the sound of a jeep struggling to climb the unbelievable road leading up to the Command Van of Operation Tektite II.

After all these years, this tape remains the prized souvenir of the writer's visit to the Virgin Islands; the one that tells the most about the place. Yes, records of the trip include many drums of slides and the other more conventional collectibles that were gathered during the tour. But on cold winter nights, back home, selections of these tapes played on the home stereo set (preferably in a darkened room) do the most to take the writer back to St. John. The sound of it all is simply haunting.

In the years since then the writer made it a first order of business to make these kinds of recordings almost everywhere he went. The collection now includes the roaring of the surf at Nags Head and Cape Hatteras, 'gators bellowing in the Everglades, rain falling through vegetation almost everywhere — the list is now prodigious. So many are there, now, that the collection has been refined to shorter tapes that include "The Best of (name of place)."

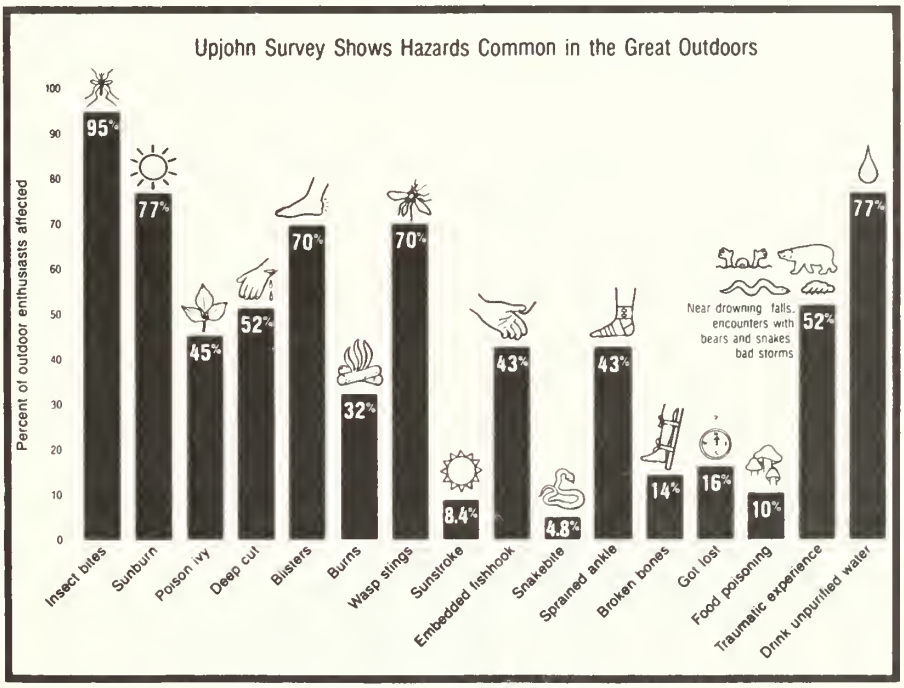
It's very easy to think that pictures are the main communication mechanism among such souvenirs. Yet, it is these recordings that most stimulate the sense of recall one expects when using souvenirs to revisit favored places. Others must feel the same way for there are now many commercial 12" long-play stereo recordings that deal solely with 'rain', 'meadowlands' (with background bird sounds), and other sounds of natural environment.

With such potential impact it is a wonderment to this writer that he has yet to find such 'canned environment' cassettes or records in the otherwise book-and-picture-filled racks of park concessionaires. And there also appears to be a paucity of Park Service generated archival material that includes recordings featuring this important environmental element of our many natural-area parks.

Because we must police our valuable resources against the visitor-urge to collect things in the parks that are fragile (such as flowers) — or unreplaceable such as 'samples' of petrified wood, or the obsidian glass in Yellowstone National Park — we should try equally to find constructive ways to satiate this very human urge; to take a piece of the park home as a souvenir. We have long used the slogan, "take only photographs and leave only your footprints," to ward off the plundering of park resources. We are in an excellent position to help blunt this urge, in a positive way, by adding "sounds of the parks" to this message.

(Continued on page 25)

First Aid Items for Outdoor Enthusiasts



A recent national survey of 750 avid outdoor enthusiasts showed that as many as 80% of the nation's outdoorsmen suffer frequent and repeated accidents and illnesses during their excursions. The following summary recaps the most common ailments reported, and provides tips for accident prevention and treatment from wildlife photographers and wilderness expert Leonard Lee Rue III and Dr. George Royer, M.D., of The Upjohn Company, sponsor of the national survey.*

Sunburn — Of those polled, 77% have been sunburned recently and 42% have had more than five burns in the last few seasons. Hikers, campers, canoeists and skiers were most vulnerable. Rue advises wearing long-sleeved cotton clothing, a wide-brimmed hat and using a sunscreen with an SPF of 7 or higher.

Sprained ankle — 43% had suffered a sprain. Bikers, hikers and rock climbers were the most frequent victims. Dr. Royer suggests treatment with cold compresses followed by hot ones. Stay off the ankle as much as possible; wrap in an Ace bandage.

* "The in-depth first aid survey of 750 hunters hikers, anglers, backpackers, canoeists, mountain climbers, bikers and skiers was conducted by Dresner, Morris & Tortorello Research, Inc., of New York for The Upjohn Company of Kalamazoo, Mich. The male and female respondents — each of whom participate in at least two listed outdoor activities for three weeks or more a year — were screened and selected from four geographic regions (North, South, Midwest and West) of the U.S. The results are projectable nationally with a margin of error of ±4%, according to Upjohn.

Deep cut — A little more than half had experienced such injuries. Suggested treatment: 1) stop the bleeding by direct pressure; 2) apply pressure bandage; and, 3) elevate the limb until you can get medical help.

Insect bites — More than 95% of the respondents said they were plagued by insect bites and stings each season. Popular treatments included mud, vinegar, ice, soap and water, hydrocortisone and alcohol. The preferred treatment by Southern outdoor enthusiasts was alcohol. The preferred treatment by male outdoorsmen across the country was to "do nothing"—just suffer. "I've used mud to stop the itch when I had nothing else," says Rue. "And vinegar will relieve the sting somewhat. Although ice will do the trick, it's mighty hard to come by on the average outdoor trek! I've found the sap from Jewelweed works well." He also said that outdoorsmen are using more and more hydrocortisone to relieve the itch and swelling, now that one can get it without prescription.

Blisters — 70% report they often get blisters, with canoeists, backpackers and mountain climbers reporting the highest incidence. One of the more unusual treatments mentioned was to pull a needle and thread through the blister and leave the thread in. "This old wive's tale

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isn't very wise," said Dr. Royer. "You're asking for an infection." Dr. Royer states, "Don't pop a blister so it won't be irritated further. If you think it will pop due to friction or pressure you can't avoid, cleanse the area, pop it yourself with a sterilized needle, apply antibiotic and cover with gauze and adhesive tape." But do not, he cautions, pop a blister caused by a burn.

Broken bones — 14% of those surveyed had broken bones during outdoor ventures. Interestingly, more hunters and canoeists than skiers suffered fractures. To tend a broken bone until medical help arrives, stop the bleeding with gentle, direct pressure; cover the entire wound with a bandage; treat the victim for shock; splint the injured part, tying the splints in place above and below the injury. DO NOT try to set a bone or push a protruding bone back into the body.

Burns — (such as from campfire) Almost a third of those polled had been burned during recent outings. They reported using cold water, ice, bandages and butter to treat their injured skin. However, the preferred treatment for common first-and second-degree burns is to apply cold water (not ice) or cold compresses. Next, cover the affected area with sterile dressing. Dr. Royer warns "it is important not to use butter or an ointment on a bad burn. The salt in butter will irritate the tissue. And, a doctor will have to scrape off the butter or ointment before treating you."

Embedded fishhook — 43% of anglers and 34% of all outdoor enthusiasts polled said they had experienced this accident. The American Medical Association recommends pushing the embedded hook through the skin, then cutting off the barbed end so you can slide the hook out of the skin.

"But there's a relatively new method," says Rue, "that starts with pushing the eye of the hook down against the flesh at the site of protrusion. Then loop a cord under and around the fishhook. While pushing down the eye of the hook to remove pressure from the barb inside the flesh, you pull the hook out by pulling on the cord-in the direction opposite the eye of the hook."

Poison Ivy — Only half of the respondents knew how many leaves are on the poison ivy vine (the plant has three leaves on each stem). "If you suspect you have touched the poisonous vines or shrubs, you should wash off the affected area with soap and water, or just water if that's all you have. Then, change your clothing because the poisonous resin can easily stick to your skin if you touch contaminated fabric. A hydrocortisone medication will help relieve the itch and redness of early or mild cases of poison ivy," explains Rue. "Jewelweed is good, too."

Safety Insurance — Almost 75% of the respondents said they take a first aid kit with them on outdoor treks. But the average kit lacks many of the essential first aid supplies appropriate for extended outdoor ventures. Rue says a survival pouch, filled with about 30 items essential for safe excursions-whether a person is backpacking in Yosemite or hunting along the Ganges River-can be bought for about $35 and will help insure years of safe travel. Based on more than 40 years of experience in outdoor adventures, Rue recommends stocking the pouch with the following items:

Water purification tablets
Anti-diarrhea medication
Mylar "space blanket"
Band-aids, gauze, adhesive tape
Antibiotic ointment
Alcohol pads (antiseptic)
Cutter's snake bite kit
Aspirin or Percogesic
Soap
Prescription medications
Cortaid for poison ivy and insect bites
Solarcaine for sunburn
Sunscreen
Police whistle
Nylon rope
Flashlight (or "bite light")
Knife
Snare wire
Nails
Plastic bags
Lip balm
Compass
Butane lighter
Safety pins
Extra socks
Extra shoelaces
Insect repellent
Survival/first aid manual

This article appeared in Woodall's *Campground Management*, Volume 14, No. 4, April 1983.

Emergency Equipment Flashers

The roads at Point Reyes National Seashore (CA) have many switch-back curves and visibility is often poor because of the frequent dense fog. This situation creates a potentially hazardous condition for the dump trucks when they are making their rounds.

Motor Vehicle Operator Anthony Richard Bettencourt suggested equipping the dump trucks and one pick-up truck with overhead (ramp type) emergency road equipment flashers. These flashers are visible from a greater distance, and can penetrate the fog, thus reducing the possibility of injury to the workers, the public and the equipment.

Bettencourt was presented a $25 National Park Service incentive award for his suggestion.

Sounds of Parks

(Continued from page 22)

Quite aside from serving the wants of our visitors (something we all too often leave to the concessionaires), we ought to include collecting the sounds of life in our parks as a valuable adjunct to the other resource-cataloging that is done by our resource managers. The technology for doing this (such as was employed by the writer to make his first collection in the Virgin Islands) has become increasingly simple and easier to accomplish since the advent of the small carry-along stereo recorders now virtually a basic part of the jogger's layette of equipment.

Today's cheapest portable cassette recorders are almost in league, technically, with the studio equipment of the 'sixties' — and get better almost daily. While you can go 'professional', by today's standards, and spend a grand on a fine portable field cassette recorder for the collection of such park sonic records, almost any commercial-grade recorder will do a fine job of capturing the sounds of a park, in living stereo.

It will call for using those of our staff who would rise enthusiastically to the task, for it's the kind of chore that requires a willingness to have such recording gear ever present. The best of park 'noises' are often a momentary ephemeral happening. One must know where to be at the right place and time, to catch the best renderings of an alligator chorus. Because current equipment is so small there is little reason not to have it always handy in the park ranger's duffle of gear.

Studio-quality skills can be a real asset but are not a precluding requirement. If the person taking on the task becomes enthusiastic about it, only a little bit of wasted tape and effort might accompany early efforts, during which time the user of the gear becomes increasingly proficient — and imaginative — in ultimately making the results of such efforts quite superb. And the costs for such capability need not exceed several hundred dollars for a basic recorder, a set of hand-held mikes (for tailoring sound-source choices), a set of light headphones, and a goodly stock of blank tapes and a tape-wiping device. The rest is good record keeping — a batch of tapes — unlabeled– is going to make application of them difficult.

Where good imagination comes in deals with just how well the ranger knows the park — and knows what to record, where, and when (time of day, or season). The list of likely candidates beggars description (and would be too long to include here). The sound of Old Faithful going off is the kind of

candidate that might well be overlooked — because we have become so used to it. But it probably still sounds pretty much as it did the first time it was heard, centuries ago, i.e., not all the valuable sounds are animalculine. The sound of falling water and other physical sounds are just as much a part of the park as the critters that live in it.

A logical extension of such record keeping would be finding avenues for getting the best of such sounds into the hands of the visitors to our parks. A main reason for having the Park Service take the lead to obtain such recordings is a case of simple economics (quite aside from the advantage that we would also know best where to get the best sounds — and when). Our staff is always abroad within the parks, engaged in many activities. Thus, they have the best chance to obtain even the briefest of important sonic events. Commercial producers of such recordings would be hard put to afford the staffing costs that would accompany any attempt to faithfully record all the significant sonic expressions of any given park. They simply couldn't afford the standby time and, at best, could obtain only a limited representation of the sounds of the parks. But an ever-increasing collection of such material, picked up by our park managers while they are out in the parks for other reasons, would attract the attention of those whose business is the marketing of packaged recordings — and who would know full well what their costs would be to do the same job under conventional production circumstances. The park's collection of park sounds might very well stimulate commercial people to go forth on their own, and produce such programs, but the economical way of obtaining the vital 'raw' recorded material dictates that park people be involved in the process. And if park-made recordings are ultimately used, it is logical that certain royalties would go to the Parks and History Association as payment for their use — and serve to pay for our cost to get the material.

From a marketing point of view, the packaging of such materials could be quite broad. "Sounds of our Parks," on cassettes or records, could be packaged with illustrations and interpretive copy that could accompany such recordings. These could include slides for those who might want to both show pictures and listen to the sounds

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of the subjects of the pictures. One considerable benefit of having such recordings available to park visitors is the ability to include sounds that are highly seasonal (mating calls, etc.) that can be enjoyed — live — only by those visitors who happen to be in the park at the right time. Recordings of such sounds, available from concessions outlets, would eliminate this seasonal limitation of the park visitor experience.

Lastly, our interpretive staffs and rangers could become sufficiently attuned to the concept to alert and advise visitors on how and where to make such recordings on their own. A great many park visitors now carry such small recorders and might welcome the opportunity to use them for something other than just listening to music while they jog or travel about in the park. It shouldn't be hard for park staff to recognize such candidates; they usually have such recorders hanging from one shoulder. Just giving them the idea might be all there is to it. True, many will not have the separate hand mikes that lend themselves to better stereo separation — and control — but units with built-in mikes do almost as good a job. But having any such recordings of life in the parks is going to be of benefit to the visitor. If they then want to do more of it, better, they will be quite willing to pick up much better equipment for their next trip.

What's involved in all this is really quite small. But the returns would be a tremendous boost for the visitors — almost all of whom increasingly wish to take more and more of their visitation experiences home with them. Here is a way we can offer positive results that harmlessly whet this appetite. All too often we spend too much of our time trying to stifle this urge, because of the potential damage that can come from the satisfaction of the urge when it involves removing resources that cannot be sacrificed.

John Hoke is an Urban Park Program Specialist with the National Park Service's National Capital Region.

Energy Saving

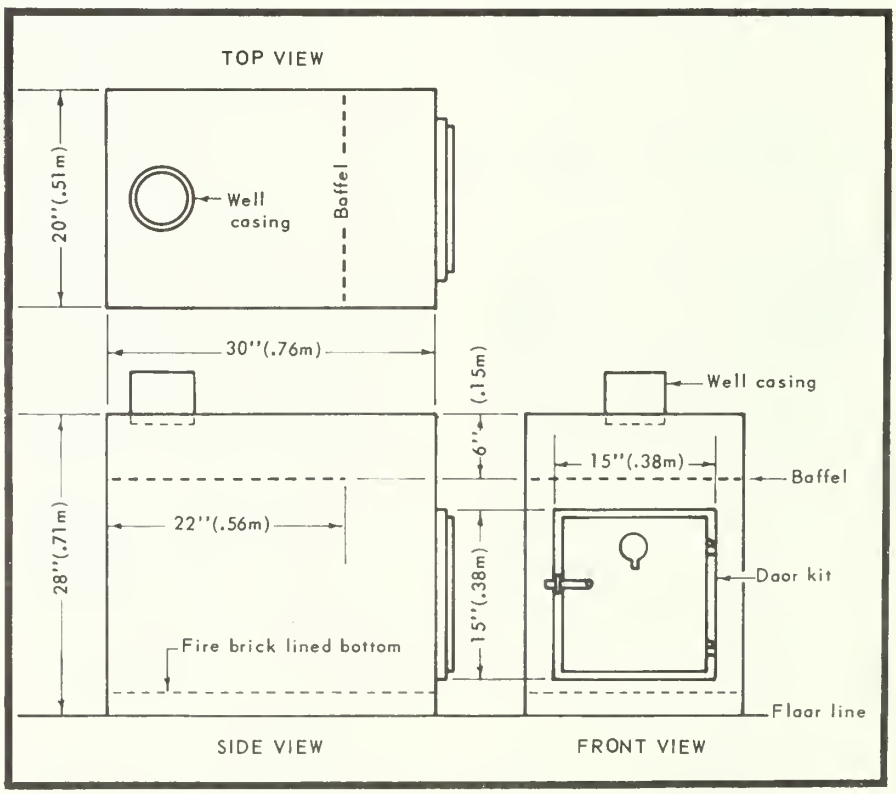
Wood-burning Stove

Labor Foreman Sheldon P. Mentzer of Colonel Denning State Park (PA) designed this wood-burning stove with inexpensive parts and the use of a skilled welder.

The stove is constructed of ¼'' plate steel and the pipe collar is 6'' well casing. The door was ordered in a kit for a wood burner converting a 55-gallon drum. Approximate cost for materials was $159.00 and it took some 30 man-hours to construct.

Thanks to Park Superintendent Kenneth J. Boyles for sharing Mentzer's design with GRIST readers.

Editor's Note: Before building a stove such as this, it would be advisable to make sure your chimney, fireplace, floor under the stove, and the wall areas near the stove meet standards set by the *National Fire Codes*. A copy can be obtained from the National Fire Protection Association, 470 Atlantic Ave., Boston, MA 02210.



Autotherm Energy Conservation System

When emergency vehicles are deployed during winter months in the Grand Canyon National Park (AZ), they often must be left idling to keep the patrol vehicles warm during stationary patrol, i.e., radar assignments, on-scene motor vehicle accident investigations, routine reports in a public setting or to keep ambulances and rescue vehicles warm for effecting emergency care. These situations increase energy consumption and pose the threat of carbon monoxide poisoning.

Law Enforcement Technician Steven E. Schneider (formerly with the Grand Canyon NP) suggested utilizing the Autotherm Energy Conservation System (AEC) to conserve energy and provide better and safer services to the public. This system continues the circulation of hot engine coolant through the vehicle heater even when the engine is shut off, and eliminates the danger of carbon monoxide poisoning.

A small, magnetically coupled, electric motor driven circulator, easily spliced into the heater hose, automatically continues circulation of engine coolant through the heater whenever the engine is turned off. The vehicle may be left safely parked and locked, the interior kept warm, windows and door locks free of ice and snow, and the vehicle ready to go on a moment's notice. When water temperature falls to 95°F, a thermostat automatically turns off the entire Autotherm system. This is beneficial during inclement weather when rangers are absent from the vehicle for investigations, shift changes, etc.

This conservation system would enable rangers to keep warm while operating radar, completing reports without having to idle the vehicle's engine. It would also keep ambulances and rescue vehicles warm during emergency operations for effecting patient stabilization and life support care. It would also preserve life-saving emergency drugs which may become inactive if subjected to the cold, i.e., "Manitol" which is used for head trauma which crystalizes at approximately 50°F. The AEC System would also provide a safer and faster response during call-out periods, for there would be no need to clear frost from the vehicle's windshield; thus reducing the potential hazard of an emergency vehicle being operated with a full or nearly obstructed windshield. The AEC System requires no maintenance, is adaptable from car to car and can be installed in approximately 1-1½ hours for a cost of about $150 per car (including labor).

Schneider estimates a savings of approximately $744 in gas per vehicle that is operated at the Grand Canyon's South Rim during the winter months.

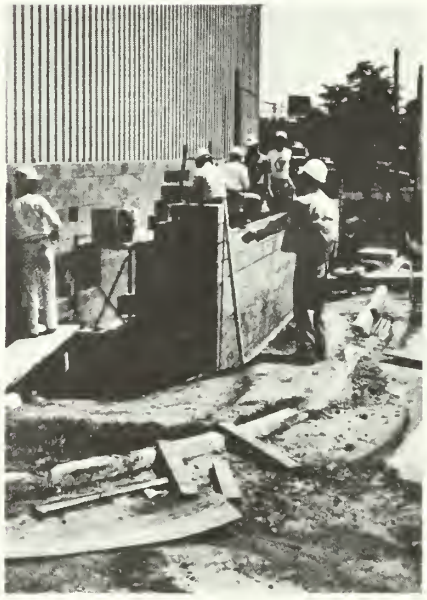
Further information on the Autotherm Energy Conservation System may be obtained from: Autotherm, Inc., P.O. Box 333, Barrington, IL 60010, telephone (312) 381-6366.

U.S. Park Police Solar Demonstration Project — An Economic 'Trickle' Type Solar System

On March 28, 1983, 5 months of winter operation was completed by the United States Park Police Solar Demonstration Project with spectacular results. During this five-month period only $302.46 was required for electricity to heat the 2,000 square foot offices occupied by the U.S. Park Police Aviation Unit. Of this $302.46, only $135.39 was attributed to electricity required for back-up or auxiliary heat. Ninety-seven percent of all heat was supplied by the solar system.

The United States Park Police Demonstration Project utilizes a ''trickle'' type solar system invented by Dr. Harry Thomason over 25 years ago. It is a system that can be easily installed to provide space heat and hot water or just hot water, to any commercial or residential building. The U.S. Park Police Y.A.C.C. camp constructed the building which houses the solar system, with the help of the Harpers Ferry Job Corps, and the National Capital Region-East maintenance personnel completed the project in April 1982.

Any park with plumbing, electrical and basic construction skilled personnel can easily install a similar system which could save thousands of dollars over the cost of a conventional heating system. All that is required is a pitched roof in good repair, oriented within 15 degrees of due south, and room for the storage bin to allow the use of this type of solar system.



The heat collection portion of this system is incredibly simple. It consists of a solar controller with temperature sensors located in the storage bin and within the solar collectors to evaluate the availability of sufficient heat to activate the system. If the temperature in the collectors is high enough to gain solar heat, the controller turns on the two 1/6th h.p. circulating pumps that send water from storage to the top of the collectors. This water flows, or ''trickles,'' down the face of the 60° sloped collectors, runs through 2'' copper pipes at the base of the collectors, and back into the storage bins (these contain two 275 gallon domestic hot water (D.H.W.) preheaters and a 1600 gallon tank used for space heating).

That's it. There are no pressure relief valves, drain back devices, or expensive antifreeze solutions, and there is no danger of freeze-ups, provided the copper feed and return pipes are pitched to return the solar water back to storage when the system is deactivated. The life of the system is over 20 years, and could have been extended even longer than that if stainless steel tanks had been used instead of the conventional steel storage tanks.

Heat is sent to the occupied space via a squirrel cage blower

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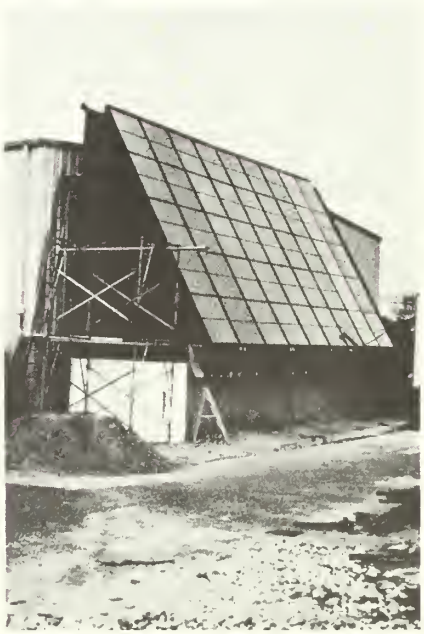
which is activated by the thermostat. This blower sends air into the bottom of the storage bin which has an air plenum constructed of standard 8'' by 12'' cinder blocks situated to direct the air under and around the 1600 gallon tank. The tank is surrounded by 35 tons of large, round, washed gravel tailings. The air is then directed back into the occupied space carrying the stored solar heat. Here again, it's just that simple.

City water is preheated by sending water to a 275 gallon storage tank which contains a 40 gallon preheater. This preheated water is then piped to a commercial 50 gallon domestic hot water heater. In the spring, summer and fall, the solar system delivers 140° water so that from about May 1 to mid-September, the conventional D.H.W. heater can be shut off altogether.

The system has no back-up furnace, but instead utilizes the existing 50 gallon D.H.W. heater. The first stage of the thermostat activates a blower that extracts heat from the main storage bin. When this is not sufficient, the second stage of the thermostat activates a 1/20th h.p. circulating pump sending hot water from the D.H.W. heater through 150 feet of copper finned tubing located in the ductwork above the main storage bin. Air from the occupied space is blown through the storage bin, picking up some residual solar heat, then warmed more by the finned tubing to provide heat back to the building.

During the 3,528 hours of the 5-month heating season, back-up heat was required only 96.4 hours, or less than 3 percent of the time. The cost for back-up heat was only $135.39, which included the cost to operate the blower & 1/20th h.p. circulating pump for those 96.4 hours, and the total electrical consumption of the 50 gallon, 208 volt, 3-phase hot water heater.

The United States Park Police are extremely pleased with the success of the Solar Demonstration Project and hope to see it duplicated in other National Park Service buildings across the country. For further information contact Michael Foster, Energy Coordinator, c/o Commander, Technical Services Branch, United States Park Police, 1100 Ohio Drive, S.W. Washington, D.C. 20242, (202) 472-5786.



Maintenance

Nail Storage

Maintenance Worker Deswood Bitsoi of Canyon de Chelly National Monument (AZ) came up with an idea to make his job a lot easier.

Maintenance personnel had difficulty finding the right size nail when they needed it in a hurry because the nails were always mixed together. Bitsoi solved this problem by constructing a box for holding separate cans of assorted size nails. The nail containers were made from old one-gallon white gas cans with ½ of the front portion cut out which he painted and marked according to nail size. He then set the cans into boxes which could hold five to six cans each for storage.

Bitsoi's container system provided many benefits to the maintenance personnel. Nails can be separated into assortments such as roofing nails, tin roofing nails, chicken wire nails, U-nails for fencing, etc. Also, his device makes it more convenient to store nails, uses less space than large nail bins, and saves precious time when trying to find nails and taking inventory.

A $96 National Park Service incentive award was presented to Bitsoi for his suggestion.

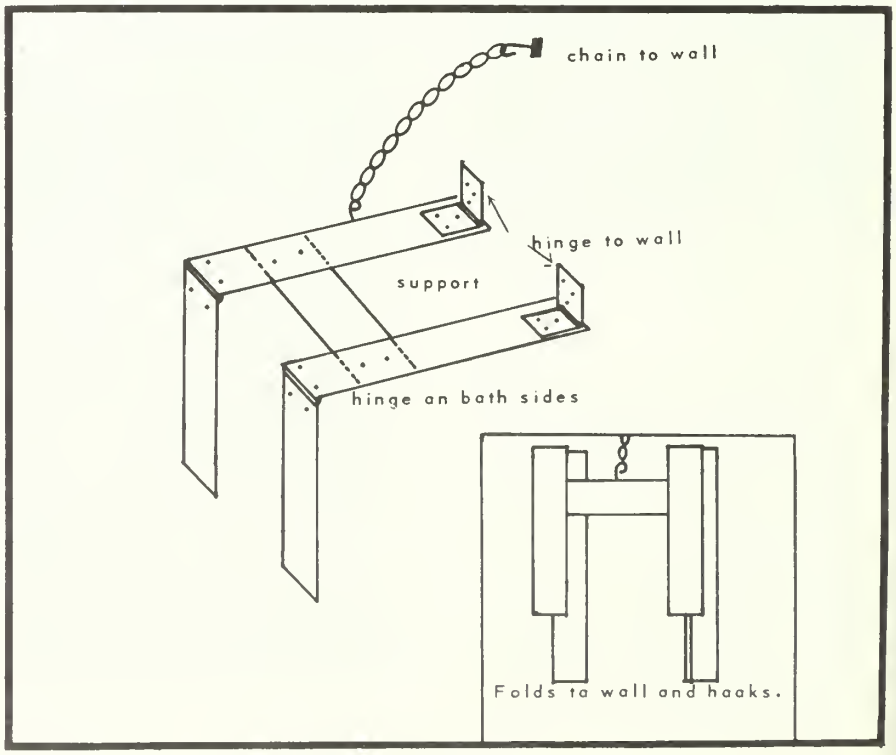
Lawnmower Servicing Ramp

When servicing lawnmowers and other such equipment, one usually tilts the mower on one side. This usually causes the fuel to spill. If the mower is tilted in the opposite direction, away from the gas tank, the fuel floods the carburetor and washes oil from the cylinder walls. And, if you tilt the mower with the gas tank down, both the gas and oil spill.

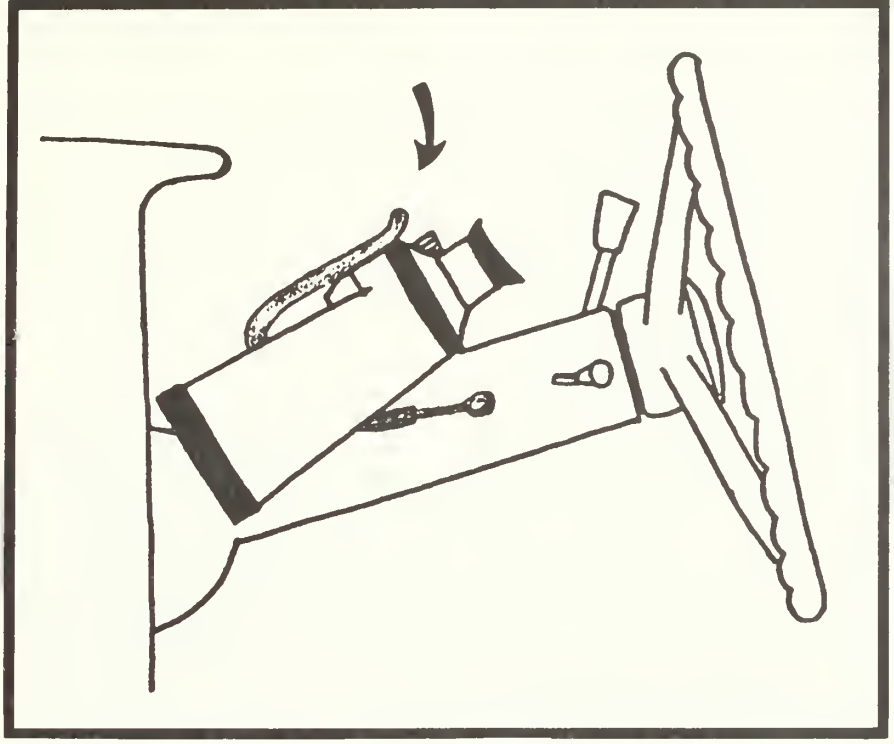
Elias H. Baiza, maintenance mechanic at Carlsbad Caverns National Park, New Mexico, developed an easier method to service such equipment. He built a small ramp approximately 2' high which is mounted to a wall. The ramp consists of 2 strips of wood (1x4 or 2x4) connected by a support. Chains are attached on each wood strip to the wall. With two hinges installed, one could also make the ramp able to fold up onto the wall for storage. A hook in the wall would hold the ramp in place while being stored.

Baiza's ramp saves time when servicing equipment and reduces the possibility of injury by eliminating the need to lift equipment during the servicing operation.

A $25 National Park Service incentive award was presented to Baiza for his suggestion.



Binocular Holder



Mac Carlisle, Assistant Property Manager at Pigeon River Fish and Wildlife Area (Indiana), developed this handy binocular holder to help persons who need ready access to binoculars while in a vehicle.

Start with approximately 26'' of 1/16'' diameter solid malleable wire. (A coat hanger will work but is generally too stiff to form the mounting loops.) Test your choice of wire to see if you can form the small mounting loops before proceeding.

Once a workable wire is found, begin in the center position and work outward, forming a contour that fits your binoculars best. Use pipe or other objects to bend the wire over, helping to make smooth curves. Trial and error will produce a design that fits both your binoculars and your steering column.

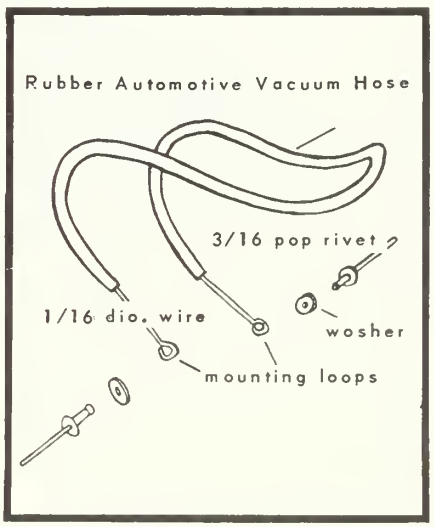
When the desired configuration is reached, check the fit once again on the steering column. Then slip a piece of automotive vacuum hose over the wire leaving 3-4'' of wire exposed at each end. With the aid of a large nail or other suitable mandrel, use wire cutters and needle nose pliers to form the mounting loops.

Position the holder with the binoculars on the steering column and make any necessary bends to get the desired fit. Keep in mind that vehicles with automatic transmissions or column-mounted shifts will have a rotation of the column during shifting, so make certain there are no binds or restrictions and that the holder sits level in the drive position.

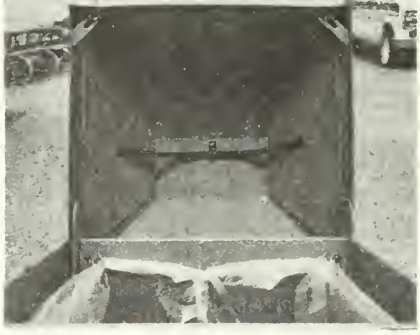
Once the best possible fit is achieved, make pencil marks through the mounting loops onto the steering column. Remove the holder and using a 3/16'' bit, drill two holes in the steering column needed to mount the holder. When drilling, remember that there can be electrical wiring harnesses inside the steering column as well as other mechanical linkage so drill carefully, piercing only the outer column housing. your vehicle has a collapsible steering column or you are unsure about drilling holes, check with your local automobile dealer or secure the holder with a strong fiber tape.

The final installation should be made with two 3/16'' pop rivets or suitable sheet metal screw substitutes. When properly installed, the binocular holder will provide a secure rest within hand reach during your trips.

Our thanks to Gerald J. Pagac, Director of the Outdoor Recreation Division, Indiana Department of Natural Resources, for sharing Mac Carlisle's device with GRIST readers.



Springs on Garbage Can Lids



The springs on garbage can doors become weak or often break after a few days' use. As a result, the doors hang open. Since replacement parts cannot be acquired, a new garbage can must be purchased at approximately $8.50 per can.

Earl W. Castle, maintenance worker at Saguaro National Monument (AZ) solved this problem by mounting a screen door spring on the inside top of the garbage can lid, and on the inside of the doors. This spring increases the tension on the doors, thus keeping them closed. This procedure can be used on any garbage can that has a swinging door with weak or broken springs.

The hardware needed to complete the job is: three 10-24 x ½'' screws; three nuts to secure screws to the can, one 16'' long x ½'' diameter door spring, and one conduit clamp to secure the spring to the top of the can.

The total cost of the hardware is under $2.00. By not purchasing a new garbage can, the savings would be approximately $6.50 per can. In addition to a cost savings, Castle's idea would improve sanitation and the general appearance of the garbage can.

Castle received a $150 National Park Service incentive award for his suggestion.

Sign Identification

Approximately 100-200 signs were being lost each year at the Grand Canyon National Park (AZ) due to vandals removing them from posts. Each sign costs approximately $25.00. If a Law Enforcement Officer found someone with a sign in his or her possession, the officer could do nothing because there was no way to identify the sign as belonging to the National Park Service. The officer would have to see someone actually remove the sign before anything could be done.

Signmaker Clyde W. Hathaway suggested implementing a transparent decal identification system such as most states are using. He suggested using an arrowhead with the letters NPS inside the arrowhead and a blank strip which can be written on for use in keeping a sign inventory. The decal would have a pressure-sensitive backing so it could be put on existing signs without taking them down. His system would permit the identification of the signs as Federal property.

Although it is difficult to estimate the cash savings from this suggestion, if 20 signs a year were prevented from being stolen, this would more than pay for the 2,000 decals at 16¢ each.

Hathaway received a $150 National Park Service incentive award for his suggestion.

National Park Service
U.S. Department of the Interior
and
National Recreation and
Park Association

Grist

Fall 1983
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Solar Kiln to Dry Wood

Woodworker Bruce Forster of Homer, Alaska, along with another woodworker, Charles Simmons, built this passive solar kiln to dry lumber for use in Forster's furniture and woodworking business.

The kiln is designed to hold up to 2000 board feet of 1'' lumber which will dry during a 200-hour charge period to 7½ percent moisture content, the ideal level for working wood. Walls and floor are insulated and interior walls are painted with aluminum and black paint. The roof is a clear plastic called Sun-Lite F.R.P., which, unlike clear fiber glass, will not cloud and become opaque. A clouded surface condition diffuses the sun's rays and reduces the efficiency of the solar collector.

Sunlight enters the dryer through the roof and is incident on one of the interior walls. The solar energy is converted to heat and circulated by an electric fan controlled by a thermostat set at 70 degrees F.

The heat evaporates the water from the lumber and increases the relative humidity (RH) of the air. When the RH becomes too high, vents on the rear, or north wall, are opened manually to exhaust the humid air and allow fresh, dry air to enter.

At night, as the dryer cools, the RH will increase as much as 100%. This cool-down and rise in the RH is important. It slows down evaporation from the wood surface. As moisture from the core of the wood migrates to the shell, stress is relieved and the moisture gradient is kept moderate. Relieving the drying

Continued on page 34.

Grist

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The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

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Membership in the Park Practice Program includes a subscription to all three publications and a library of back issues arranged in binders with indices, and all publications for the remainder of the calendar year.

The initial membership fee is $105; annual renewal is $45. A separate subscription to *Grist* is $20 initially, and $12 upon renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

stresses that develop during the day reduces cracking and warping of the wood that can occur at the end of a drying period.

Kiln temperatures below 70 degrees do not promote drying, while temperatures above 212 degrees F. will cause structural damage. To conserve energy, the fans operate only when the dryer is heated above 65 degrees.

The air circulation system controls the kiln temperature and humidity by adjusting the amount of cool, dry air that enters and the warm, moist air that is expelled. The flow of new air is kept at approximately 5 percent. During the early drying days, the humidity is kept high by keeping the vents closed.

Doors in the east and west walls provide access to the lumber stack for moisture readings. Local green lumber such as birch, spruce and cottonwood is uniformly stacked in the kiln, leaving one foot of clearance on all sides. The ends of the lumber are sealed with a parafin-based paint to prevent quick loss of moisture. In order to avoid injurious rapid drying of the wood during the initial drying process, the moisture content of the lumber should be monitored with a meter.

Maintenance

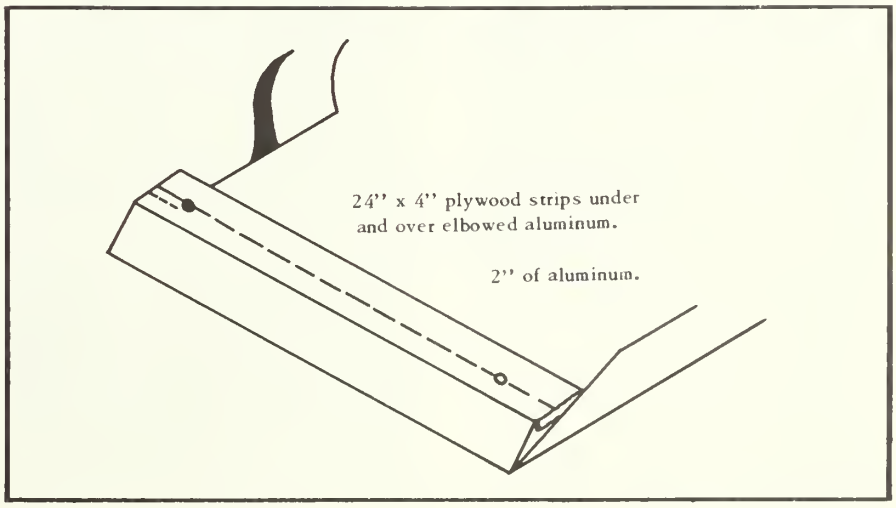
Removable Exhaust Port Shield for Mower

Lincoln Boyhood National Memorial (IN) has a formally landscaped setting surrounded by hundreds of hardwood trees. In the Fall, removing leaves is an expensive and time-consuming chore. The existing lawn mower did not have a closable shield over the exit chute which would make leaf mulching possible. However, Maintenance Worker Elmer F. Stein built a removable exhause port shield for their Model 275 Hustler lawn mower which allows maintenance workers to mow over the leaves and mulch them, usually in one pass. This reduces and, in some cases, eliminates the need to rake leaves by hand.

Stein used two pieces of scrap lumber (½'' plywood cut into 24'' x 4'' sections) and one piece of scrap aluminum (the kind used for skirting mobile homes). The aluminum was 24'' long and 6'' wide, bent into a 2'' x 4'' elbow. He also used two 2'' carriage-type bolts.

In the Fall of 1980, seven YACC enrollees raked the leaves on the Memorial grounds by hand. They worked approximately 6 hours per day for 25 working days. Stein estimates that, with the aid of his shield, the same job takes one man 4 hours to clear/mulch the leaves (averaging 5 times/trips throughout the leaf fall) which amounts to a considerable savings. Additional savings are realized by using the mulch as a fertilizer for the grounds, thus reducing the need for expensive fertilizers.

Stein received a $50 National Park Service incentive award for his suggestion.



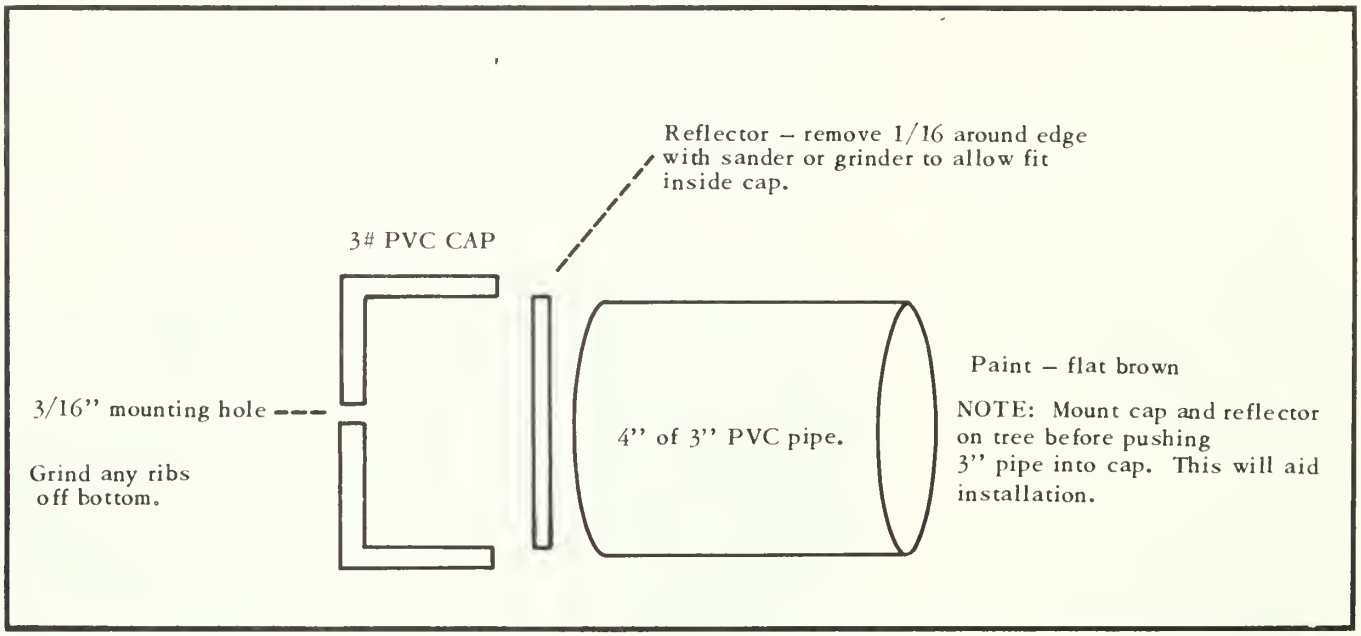
Traffic Counters

Many National Park Service areas are using infrared light beam traffic counters on roadways and trails. These are often vandalized or removed. While the scanner housing is painted a dull brown and is not readily noticeable, the reflector is easily seen, particularly when vehicle headlights and flashlights light up the reflector at night.

Park Ranger David F. McHugh of the Big Thicket National Preserve (TX) developed this simple shroud which will reduce the visibility of the reflector. Instead of being able to reflect light from an almost 180° field, it can be reduced to 74° (with 4'' sides) or 54° (with 6'' sides). The shroud can also be painted with camouflage type color, thus making it less susceptible to vandalism. Materials used were: 4'' section of 3'' PVC pipe, an end cap for 3'' PVC; a reflector and brown paint, at a total cost of $1.13.

These shrouds will reduce the visibility of the counter reflectors and thereby reduce their discovery and subsequent vandalism. They can be constructed at minimal cost and time (approximately 10 minutes).

McHugh received a $25 National Park Service incentive award for his suggestion.



Remote Switching Device for Automotive Winches

The operating switches on many of the winches on utility vehicles at Point Reyes National Seashore (CA) are in a fixed position — either mounted on the exterior near the winch itself or inside the cab. This prevents the winch operator from properly monitoring the operation. It can also prove dangerous. Should the cable of the exterior-mounted switch part under a heavy strain, it would whip back towards the operator.

Park Technician Boyd K. Burtnett suggested constructing a simple remote operating switch utilizing nothing more than a push-button switch, a length of ''zip'' cord and two alligator clips. Since more of these winches operate through a low-current relay similar or identical to the automotive starter relay, heavy-duty components need not be used.

The push-button switch is mounted on a small piece of wood and the electrical cord is hooked to each terminal. Alligator clips are attached to the cord. The cord can be any length desired and is wrapped around the mounting board when not in use.

To install the remote switch, hook the alligator clips to the relay terminals which lead to the fixed switch. This in no way interferes with the operation of the fixed switch for running the winch. Should the relay not be mounted in a convenient location for hook-up, the same effect can be achieved by hooking the alligator clips to the terminals of the fixed switch.

The safety of operating winches with fixed switches would be greatly improved with a remote switch because the operator would not have to be in a danger zone should the cable break and whip back. Because the operator is more mobile with a remote switch, the overall safety and efficiency of the winching operation is improved.

This device can also be used by automotive mechanics as a remote starting switch by hooking the alligator clips to the starter relay. This would mean that a second employee would not be needed to turn the engine over to line up timing marks, etc.

A $25 National Park Service incentive award was presented to Burtnett for his suggestion.

Winter Roadway Signing

Mount Rainier National Park, just outside Seattle in the northern Cascade Mountains, holds the world's record for measured snowfall—1122 inches. An "average" winter will bring approximately 650 inches to the Paradise area of the park. One of the more critical duties performed by Park Rangers throughout the winter months involves analyzing roadway conditions and signing the roads accordingly.

The three basic signs used to reflect roadway driving conditions are TIRE CHAINS REQUIRED, APPROVED TRACTION DEVICES REQUIRED and APPROVED TRACTION DEVICES RECOMMENDED. In past years the TIRE CHAINS REQUIRED sign was permanently affixed to a post and the remaining signs were placed back to back on a single metal sheet and hung on pins over the TIRE CHAINS REQUIRED sign as conditions dictated. This often meant handling a heavy, icy sign over one's head in windy, snowy conditions, and attempting to relocate the sign on 2 small pins near the top of the sign. When no signing was required the entire post and accompanying signs were rotated 180 degrees and pinned in place.

Recently Nisqually District Ranger Gerry Tays designed a new, safer sign that required no independent handling of signs and, consequently, no potential falling sign to injure the Ranger changing the signs. It simply involved making a book out of the sign. Engineering Equipment Operator Larry Hatcher welded each of the three signs to two short metal sleeves which fit over a central post. Each of the sleeves and the central post were drilled to enable the signs to be pinned facing the traffic or out of the way when not in use. All three signs may be pinned out of the way when no signing is required.

Wooden Barrels

The staff at Fort Larned National Historic Site (KS) is looking for wooden barrels to use as refuse containers. The barrels need to have removable lids with a hand hole, and need to be designed so that plastic bags can be inserted into the barrels without being seen from the outside.

They have contacted a private company that will design and produce the barrels if a sufficient number of barrels are ordered to make it feasible. If you have a specific design or if you know of someone already making this type of barrel; or if you are interested in obtaining them for your park area, please contact the Superintendent, Fort Larned National Historic Site, Route 3, Larned, KS 67550, telephone: 316-285-3571.

Mobile Ladder

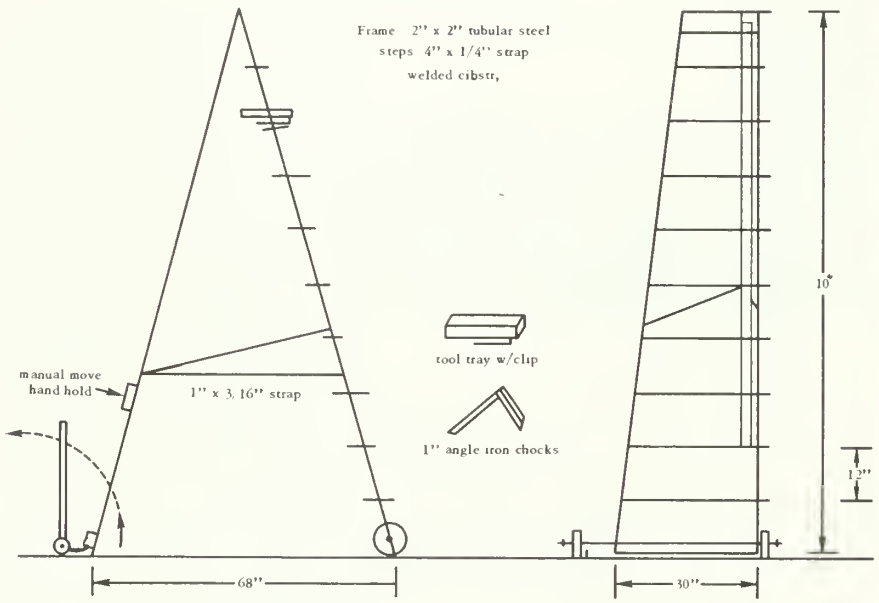
When new garbage packers were put into service at the Lake Mead National Recreation Area (AZ-NV), maintenance work on these 13 foot high packers had to be done by using stepladders or extension ladders which caused many moves and some unsafe conditions.

Weldor Ralph R. White built a mobile platform or ladder from which maintenance work could be accomplished safely without moving the ladders for each operation. This new ladder was based on the orchard ladders of the Northwest.

One leg is vertical to the floor, remaining the same distance from the truck side from top to bottom. The other leg is approxiately 22° from vertical for greater stability. The single support leg is opposite the vertical leg, also for greater stability.

For mobility, small wheels are placed on the ladder frame which raises the base of the ladder to not over an inch from the floor. The wheel on the angled leg can be moved out 8-10" for greater base width. A small, removable dolly is attached to the support leg for easy moving. Vee-shaped wheel chocks are provided for both wheels. A tray for small tools can be snapped on any of the ladder steps.

Mechanic (heavy duty) John E. Katzenbach stated he had been using the ladder to service the packers and it saves approximately thirty minutes per packer. He says it is also much safer than a regular ladder because of the wide base created by the extendable wheels.



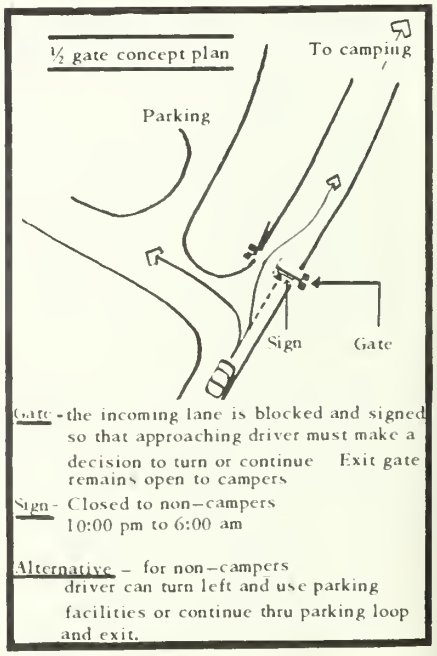
Half Gate Signing

Watercress Spring Recreation Area (MO) had a conflict with vehicles being driven through the camping area and disturbing the tranquility of the campers' outdoor experience. This situation was compounded by the fact that the road "had always been open" for local people to drive through and see what the campers were doing. This administrative problem was very sensitive in that public expectations had to be met for both the campers and the local people.

Efforts to typically sign the area with time restrictions were often ignored, and a solution to these problems was needed.

The Mark Twain National Forest staff developed a half gate system that informed all persons involved what the time restrictions were in such a way that no doubt or possibility of ignorance existed.

Soon after the installation of the half gate concept a few violation notices were issued and contested in the court system. In all cases the judgment was that it was not possible to enter the time restricted area without the vehicle driver being aware of the regulatory requirements. Soon after these court decisions supported the Forest Service position, the problems diffused and a more normal atmosphere of cooperation between campers and locals began to exist.



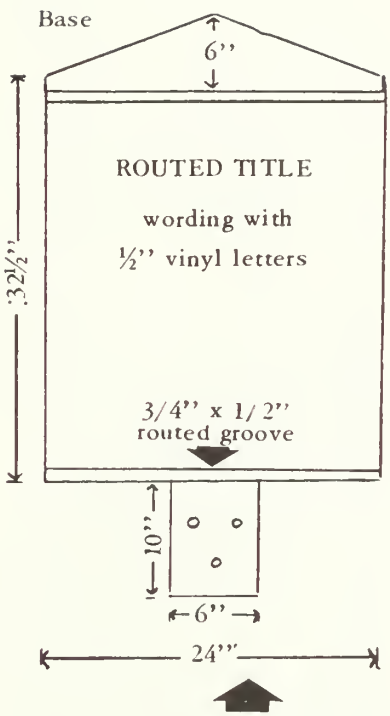
Historical Site Markers

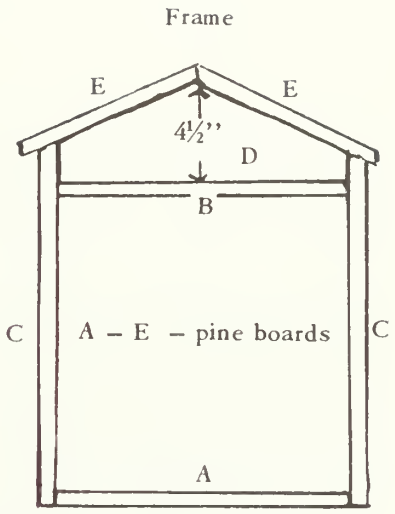
Greenwood Furnace State Park (PA) Superintendent Lawrence S. Hoffman contributed this design for an historical site marker which is totally enclosed for weather protection. All historical information was put on a board with ½'' vinyl plastic letters and covered with 6 coats of exterior polyurethane coating.

The only routing on the sign was the initial descriptive heading. Old shaker shingles were used for the roof and the door has a hand-made wooden sliding latch. Tuf-nuts were used to secure the sign to the post.

Lumber used for the sign was oak. The exterior is all ¾'' rough pine which was salvaged from an old building. The signs were installed on a 6 x 6 post cemented into the ground.

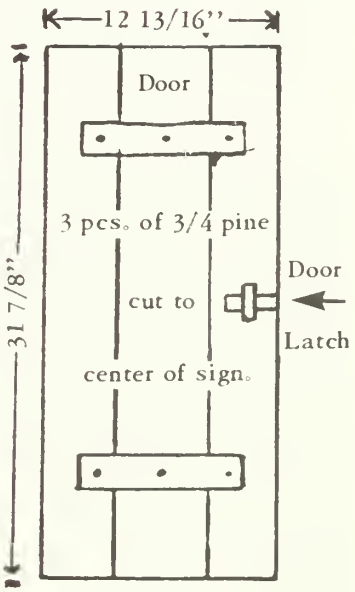
Hoffman said that by using the vinyl letters, they reduced the amount of time that the sign could be made and should the letters peel, you can replace them and recoat with more polyurethane.





2'' x 8'' oak boards cut to size and glued and clamped together.

Note: best to lay the 8'' or 6'' center board down first and glue together and cut roof peak after gluing.



Locating Underground Utilities (Part I)

General Engineer Wayne Veach of the National Park Service's Mid-Atlantic Region shares this method of determining the location of underground pipes which he learned from Chief of Maintenance Vic Martin of Petersburg National Battlefield (VA).

Required materials are two *steel* rods approximately 36'' long and 1/8'' in diameter. Bend each rod 90° at a distance of about 9'' from one end.

The rods are held by the short legs, one in each hand, short legs vertical and long legs pointed forward, horizontal, and parallel about a foot (comfortable distance) apart. One long leg should be held slightly higher than the other.

The method of support is very important since the rods must be free to pivot with little interference. The bend must be clear of the fingers and the fingers *cannot* grasp the rod. The rod is supported in each hand by one side resting against the forefinger and the other side farther toward the rod end against the middle of the palm close to the wrist. The palm of the hand is turned forward and the weight of the long leg holds the short against the palm so it won't fall.

It takes some practice to hold the rather delicately balanced rods parallel and horizontal while slowly walking. However, when the rods pass directly over the underground pipe, conduit or similar disturbance in the ground, the long legs will swing to *cross* each other. There is no way to determine how deep an object is, but the rods have detected pipe as far down as 20 feet. Veach says that for some reason, not everyone can do this, but for those who can it can be an interesting and useful tool. He also observed that when you closely approach another person, the rods will either cross or diverge. This method certainly works for Veach for he has determined the locations of direct burial electric power lines, drainage tile lines and underground septic tanks.

Locating Underground Utilities (Part II)

Landscape Architect Dennis Paul Fehler and Fire Management Officer James W. Martin of the Mark Twain National Forest in Rolla (MO) have another suggestion for locating underground utilities.

They suggest using a metalic, color-coded warning ribbon when installing a utility. This warning ribbon would be detectable from the ground surface (by metal detector, similar to what treasure hunters use) without the need for unnecessary mechanical disturbance. After installation an entire utility system could be plotted with flags on the ground surface and only the appropriate area be disturbed for repairs or additions. Also, the visual warning ribbon would warn those involved with inadvertent digging that they are in the immediate area where a utility conduit exists and that caution must be exercised.

This warning ribbon would prevent accidental damage to underground utilities and harm to those involved in the relocation process by providing an electromagnetic and visual warning marker of the actual utility trench location. It would also correctly identify underground situations so that future generations will know what is buried and the exact point-to-point path.

This idea would be especially useful for:

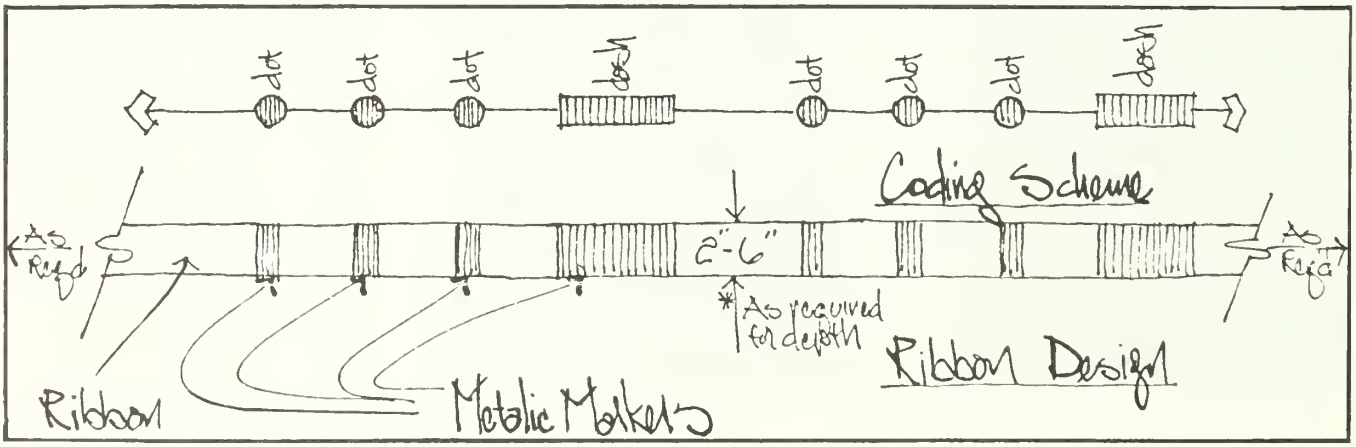
1) archeologist - to relocate boundaries of important sites or specific points such as shovel test. This would allow documentation of sites with special and appropriate artifactual warnings;

2) engineers - to provide necessary markings of all underground utilities;

3) landscape architects - to help relocate utilities when proposing design changes and when making new ground surface proposals;

4) foresters - to locate temporary corners, boundaries, etc.;

5) soil scientists - to locate soil pits for later evaluation.



Sand/Salt Storage Container

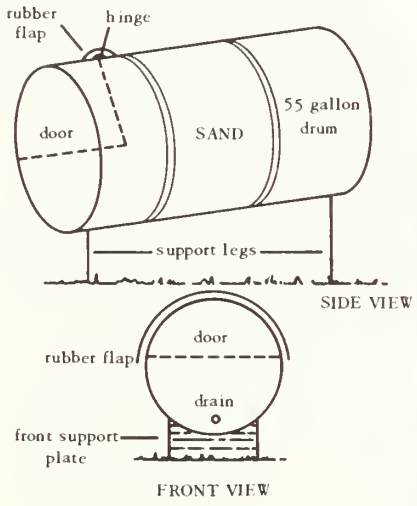
Storing sand or salt mixtures on steep driveways or dangerous hills to have ready during emergencies and inclement weather was difficult to do at Cuyahoga Valley National Recreation Area (OH). Although piles of sand were covered with plastic or canvas, strong winds would often blow the protective covering off and expose the sand to rain. In winter, the wet sand would freeze solid, making it impossible to shovel. Also, the piles would become buried under large accumulations of snow or drifts.

Maintenance Mechanic Foreman Kerry C. King solved this problem by constructing a storage container for a sand/salt mixture. King took an old 55-gallon drum and cut a section out of the barrel with a cutting torch. He welded one end of an old hinge onto the cut-out section and the other hinge's end to the barrel. He cut two pieces of sheet metal for the supporting legs and welded them to the underside of the drum. The longer legs were put in the back and the shorter ones in front for ease of loading and removing sand, and also for shedding water and snow from the container. He wire-brushed and painted the container and installed a rubber flap to shed water and seal the top joint. The entire construction process took approximately 3 hours.

The materials used were: A 55-gallon drum; two pieces of ¼'' scrap metal (16'' x 6''); one piece of old rubber floor mat (24'' x 8''); one hinge; 8 metal screws; and one pint of spruce green paint. All these materials were recycled junk except for the screws and paint which were purchased from GSA at a cost of $3.00.

King estimates a savings of approximately $2500 per year for the cost of wasted sand, travel time, labor for breaking up frozen sand, replacing torn or lost canvas, etc.

An $80 National Park Service incentive award was presented to King for his suggestion.



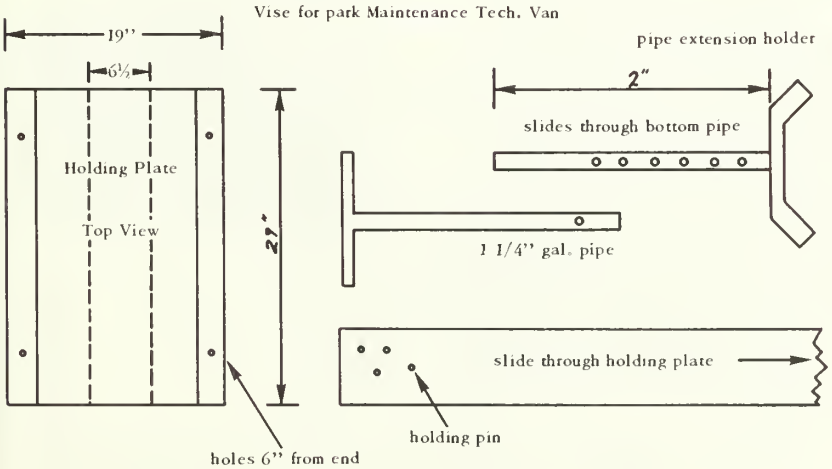
Chain Vise For Maintenance Technician's Van

Maintenance Technician Earl Slygh of Clifty Falls State Park (IN) needed a device to hold pipe while he was working in the field. When using pipe wrenches and pipe cutters, he found that they were too inconvenient when he tried to pull against each wrench.

Slygh had an old motor platform that was not in use. He cut a hole in which he could slide a 6'' piece of channel iron through and on this he mounted a small chain vise. It stands about 20'' off the ground.

Materials used were a 6'' x 5' channel iron, an 8'' x 2' channel iron plus one top screw chain vice (BC-410 rigid) for a cost of approximately $50.00.

This device saves gas and time by eliminating the need to drive back to the service area and is very convenient for on-site jobs.



Safety

Safety Award


Janet Edwards, NPS

Howard Chapman accepts Safety Award from Ronald Piescki.

The National Park Service was the recipient of the Secretary of the Interior's Annual Safety Program Award for 1982. This selection, in competition with other Department of the Interior bureaus, was made through a comparison of each bureau's improvement in its OSHA, injury, illness, accident, and motor vehicle accident rates for calendar year 1982. The award was presented in a ceremony at the Departmental Occupational Safety and Health Seminar at the Anaheim, California, Convention Center on March 21, 1983. Mr. Ronald Piescki, Director, Office of Acquisition and Property Management for the Department of the Interior presented the award for the Secretary. NPS Western Regional Director Howard Chapman accepted the award for NPS Director Dickenson.

In accepting the award, Mr. Chapman expressed the pleasure and pride in achievement by the National Park Service for this recognition. He acknowledged the efforts of all employees in the Service, but especially the safety community, in attaining the improvements in the NPS safety programs indicated by the award.

The award was formally presented to Director Dickenson at his staff meeting of May 27, 1983, by NPS Chief, Branch of Safety Management, Richard Wilburn.

This award is based on an improvement over a three-year period in the National Park Service accident rates. It represents a reduction in losses from damaged equipment and employee lost time from the job due to injury or illness. This reduction in losses is reflected in an increased efficiency in park operations as fewer hours of employees not reporting for work and equipment not being in a shop for repairs results in higher output.

Ranger Information and Safety

Grand Canyon National Park (AZ) attracts millions of visitors each year, many of whom come into contact with Protection Rangers. Protecting visitors is directly related to the information and knowledge the Protection Unit receives regarding criminal activities and identification. If a Protection Ranger knew descriptions of all major wanted lists (10-29's) in Arizona, better protection could be afforded for the Ranger and the visitor. However, there were no systematic or regular means of transmitting area-wide wanted lists to Protection Rangers.

Law Enforcement Technician Steven E. Schneider (formerly with the Grand Canyon NP) knew that the Department of Public Safety transmitted a 10-29 broadcast every morning regarding stolen vehicle descriptions and wanted felons. Schneider suggested that this daily broadcast be received through the Grand Canyon's existing teletype terminal without modifications or additions. The printout would be posted on the Ranger Operation Bulletin Board, thus providing vital information to the Protection Rangers.

Schneider's suggestion would enable the Protection Ranger to better prepare himself or herself for a potentially hostile situation; insure visitor safety by eliminating the visitors or the suspect from the arrest scene; increase morale among Protection Rangers by effecting good arrests; increase credibility with outside agencies; and enhance working relations with the immediate public.

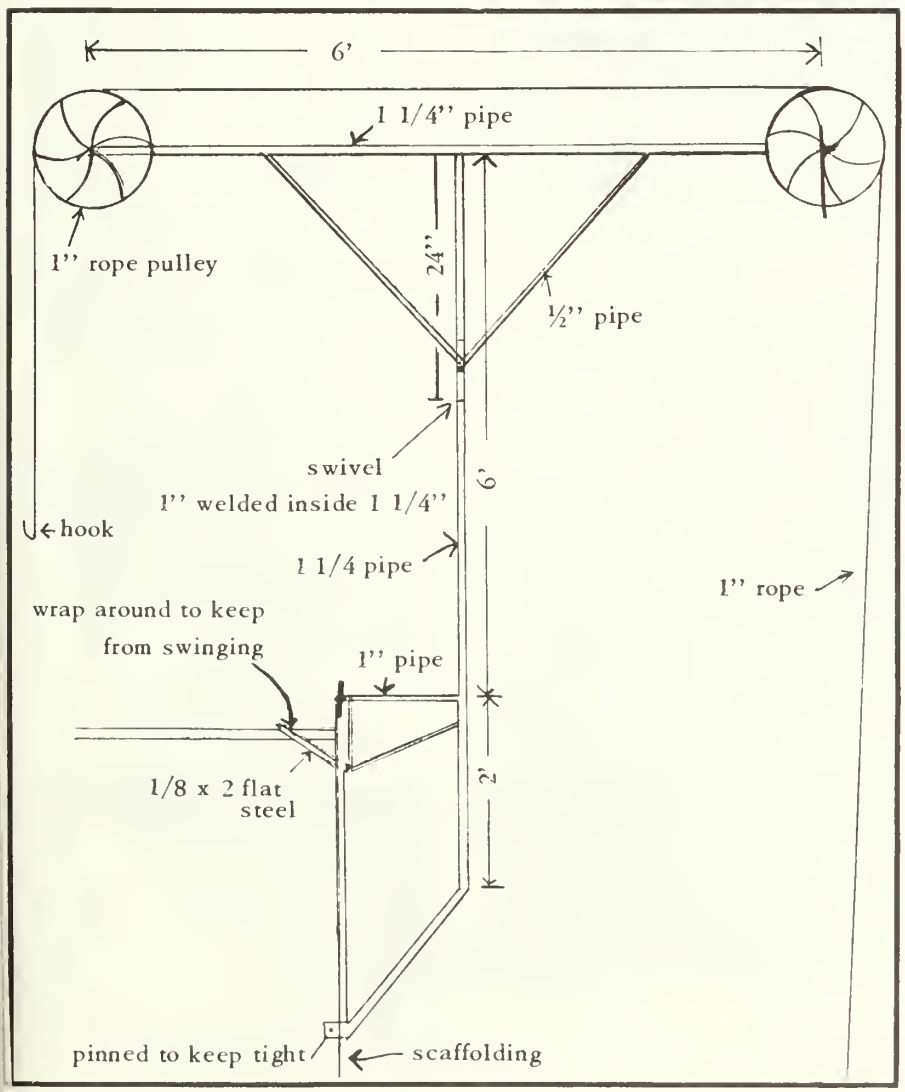
Scaffolding Safety

While working on a sectional scaffolding, William B. Kozlowski, masonry worker at Fort Larned National Historic Site (KS) realized a safety hazard existed when he used a single pulley and rope to pull up material. The pulley was attached to one corner of the scaffold and he had to stand underneath to hoist up material. Bricks could come loose and hit him.

If Kozlowski moved to one side to pull, the increased angle plus the weight of the material being hoisted tended to pull the scaffold over. Also, once the material was pulled up to working level, he had to reach over the safety railing to retrieve the often heavy load. This sometimes caused a loss of balance.

Kozlowski corrected this safety hazard by developing a swivel type "T" with pulleys on both ends. This provides the operator with ample clearance from falling material (up to 8 additional feet) and also enables the operator to swing the material in and onto the scaffold platform, thus eliminating the need to reach over the railing.

A $100 National Park Service incentive award was presented to Kozlowski for his idea.



Welding/Cutting Table

Seasonal Maintenance Laborer Burton L. Rust of Pipe Springs National Monument (AZ) constructed this handy welding/cutting table to use in the maintenance shop.

He first removed an old campsite grill from a fireplace. He cut 4 lengths of 1½" pipe to 32" and welded them onto the corners of the grill. He also welded a ½" nut on one leg 3" from the floor using a 4" carriage bolt. This serves as a leveling device for uneven floors.

This sturdy table took little time to construct and has proved highly useful in the maintenance shop.

Administration

Project Instruction Sheets

Mrs. Bernice E. Harris, secretary-stenographer with the National Park Service's Midwest Regional Office in Omaha, Nebraska, devised this efficient and effective instruction sheet for use in her office.

The instruction sheet is used on all correspondence and/or work projects by persons initiating the project. It eliminates lengthy and repeated discussions and provides documentation on exactly what is to be done, by and for whom, and the time frame involved. The reverse side can be used for further instructions if necessary. It can be easily modified to suit one's particular office situation or needs.

Mrs. Harris was presented a $25 National Park Service incentive award for her suggestion.

INSTRUCTIONS DATE _____

TO:

FROM:

NEEDED: M TU W TH F

1 2 3 4 5 6 7 8 9 10 11 12 13 14

15 16 17 18 19 20 21 22 23 24 25

26 27 28 29 30 31

TYPE Rough Final
Double Single

COPY NO: Xerox Staple
Reduce Cut-to-size

ACTION: Write/Respond Revise Input
Review Proof Sign Initial
Concur/Approve Discuss
Return Distribute Mail
File Suspense

ENCLOSE: Brochure Literature
Material Maps Incoming

_____ See other side

MESSAGE _____

Special Populations

The following ideas appeared in the May 1983 issue of An Accessible Heritage, a National Park Service newsletter which shares ideas for making the National Park System more enjoyable for handicapped visitors.

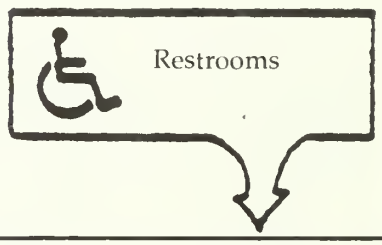
Park Brochure

Every park should have an accessibility guide that tells the handicapped visitor or potential visitor what is and is not accessible to him or her in the park. It is also good to put some of the information, even if only in brief form, in the park brochure.

In the event that the brochure will not be revised for some time, this can be done simply and inexpensively by ordering hand rubber stamps. For example, a small boxed statement with the wheelchair logo can be stamped in a convenient open space in the brochure's text.

Another way is to stamp some helpful information directly on the brochure map. Such messages can then be added in the next printing. In the meantime, a quantity sufficient for the handicapped visitors can be hand stamped as needed.

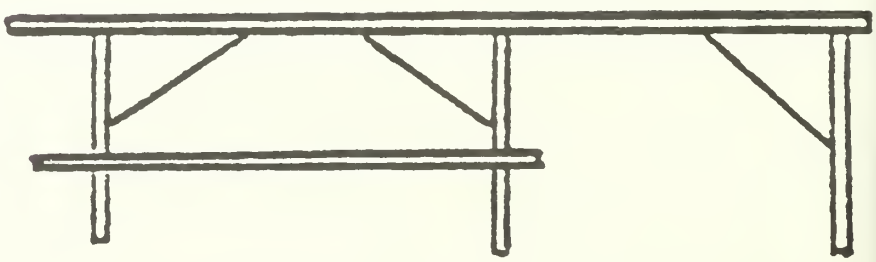
The visitor center is accessible to wheelchairs, as are the campground and the nature trail. Handicapped parking and curb cuts are found in most areas, and there are accessible restrooms at the picnic area.



Picnic Tables

The most common way to adapt a picnic table for wheelchair use is to extend the top 18'' to 25'', so that the chair can be pulled up to the extended side or end.

The C&O Canal National Historical Park has altered some of its tables by extending one end a full 48'' and adding another support at the new end. One chair can sit at each side, with another at the end, with space to spare.



National Park Service
U.S. Department of the Interior
and
National Recreation and
Park Association

Grist

Fall 1983
Volume 27/Number 4

Solar Kiln to Dry Wood

Woodworker Bruce Forster of Homer, Alaska, along with another woodworker, Charles Simmons, built this passive solar kiln to dry lumber for use in Forster's furniture and woodworking business.

The kiln is designed to hold up to 2000 board feet of 1'' lumber which will dry during a 200-hour charge period to 7½ percent moisture content, the ideal level for working wood. Walls and floor are insulated and interior walls are painted with aluminum and black paint. The roof is a clear plastic called Sun-Lite F.R.P., which, unlike clear fiber glass, will not cloud and become opaque. A clouded surface condition diffuses the sun's rays and reduces the efficiency of the solar collector.

Sunlight enters the dryer through the roof and is incident on one of the interior walls. The solar energy is converted to heat and circulated by an electric fan controlled by a thermostat set at 70 degrees F.

The heat evaporates the water from the lumber and increases the relative humidity (RH) of the air. When the RH becomes too high, vents on the rear, or north wall, are opened manually to exhaust the humid air and allow fresh, dry air to enter.

At night, as the dryer cools, the RH will increase as much as 100%. This cool-down and rise in the RH is important. It slows down evaporation from the wood surface. As moisture from the core of the wood migrates to the shell, stress is relieved and the moisture gradient is kept moderate. Relieving the drying

Continued on page 34.

Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

Russell E. Dickenson, Director
National Park Service

John H. Davis, Executive Director
National Recreation and Park Association

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Division of Cooperative Activities

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The Park Practice Program includes: *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a quarterly publication on practical solutions to everyday problems in park and recreation operations including energy conservation, cost reduction, safety, maintenance, and designs for small structures; *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

stresses that develop during the day reduces cracking and warping of the wood that can occur at the end of a drying period.

Kiln temperatures below 70 degrees do not promote drying, while temperatures above 212 degrees F. will cause structural damage. To conserve energy, the fans operate only when the dryer is heated above 65 degrees.

The air circulation system controls the kiln temperature and humidity by adjusting the amount of cool, dry air that enters and the warm, moist air that is expelled. The flow of new air is kept at approximately 5 percent. During the early drying days, the humidity is kept high by keeping the vents closed.

Doors in the east and west walls provide access to the lumber stack for moisture readings. Local green lumber such as birch, spruce and cottonwood is uniformly stacked in the kiln, leaving one foot of clearance on all sides. The ends of the lumber are sealed with a parafin-based paint to prevent quick loss of moisture. In order to avoid injurious rapid drying of the wood during the initial drying process, the moisture content of the lumber should be monitored with a meter.

Maintenance

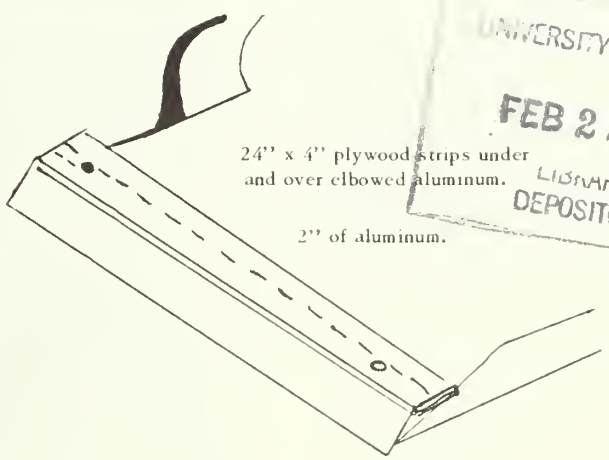
Removable Exhaust Port Shield for Mower

Lincoln Boyhood National Memorial (IN) has a formally landscaped setting surrounded by hundreds of hardwood trees. In the Fall, removing leaves is an expensive and time-consuming chore. The existing lawn mower did not have a closable shield over the exit chute which would make leaf mulching possible. However, Maintenance Worker Elmer F. Stein built a removable exhause port shield for their Model 275 Hustler lawn mower which allows maintenance workers to mow over the leaves and mulch them, usually in one pass. This reduces and, in some cases, eliminates the need to rake leaves by hand.

Stein used two pieces of scrap lumber (½'' plywood cut into 24'' x 4'' sections) and one piece of scrap aluminum (the kind used for skirting mobile homes). The aluminum was 24'' long and 6'' wide, bent into a 2'' x 4'' elbow. He also used two 2'' carriage-type bolts.

In the Fall of 1980, seven YACC enrollees raked the leaves on the Memorial grounds by hand. They worked approximately 6 hours per day for 25 working days. Stein estimates that, with the aid of his shield, the same job takes one man 4 hours to clear/mulch the leaves (averaging 5 times/trips throughout the leaf fall) which amounts to a considerable savings. Additional savings are realized by using the mulch as a fertilizer for the grounds, thus reducing the need for expensive fertilizers.

Stein received a $50 National Park Service incentive award for his suggestion.



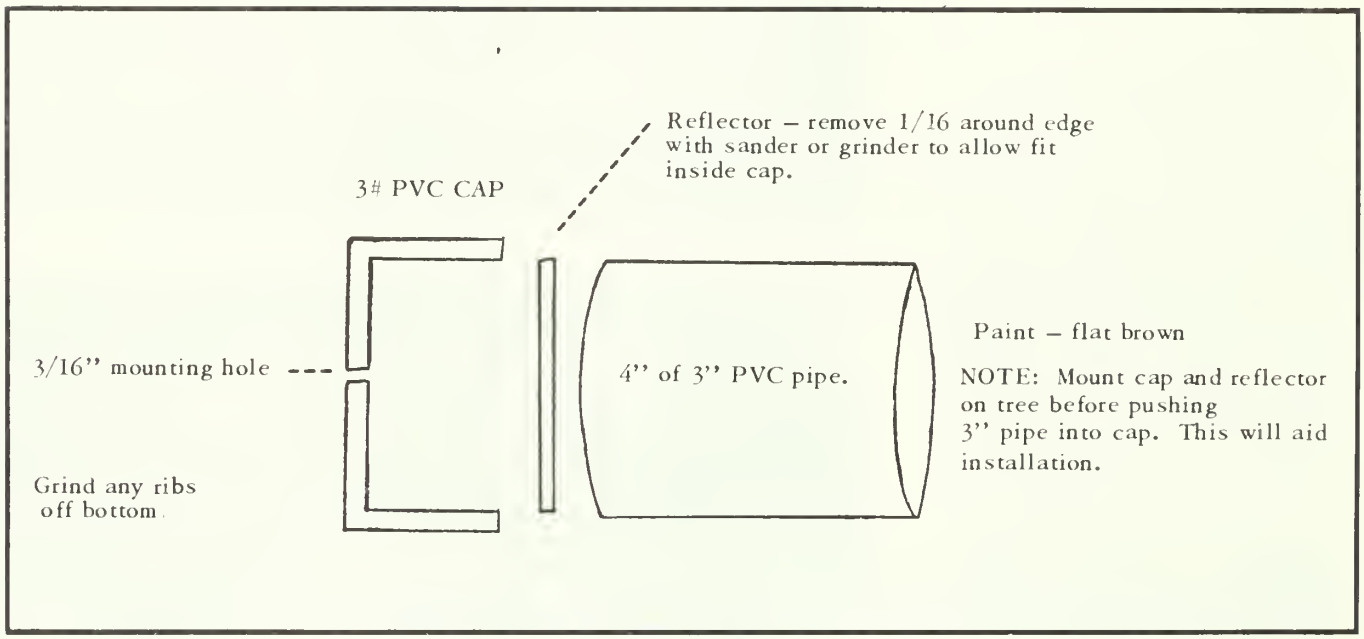
Traffic Counters

Many National Park Service areas are using infrared light beam traffic counters on roadways and trails. These are often vandalized or removed. While the scanner housing is painted a dull brown and is not readily noticeable, the reflector is easily seen, particularly when vehicle headlights and flashlights light up the reflector at night.

Park Ranger David F. McHugh of the Big Thicket National Preserve (TX) developed this simple shroud which will reduce the visibility of the reflector. Instead of being able to reflect light from an almost 180° field, it can be reduced to 74° (with 4'' sides) or 54° (with 6'' sides). The shroud can also be painted with camouflage type color, thus making it less susceptible to vandalism. Materials used were: 4'' section of 3'' PVC pipe, an end cap for 3'' PVC; a reflector and brown paint, at a total cost of $1.13.

These shrouds will reduce the visibility of the counter reflectors and thereby reduce their discovery and subsequent vandalism. They can be constructed at minimal cost and time (approximately 10 minutes).

McHugh received a $25 National Park Service incentive award for his suggestion.



Remote Switching Device for Automotive Winches

The operating switches on many of the winches on utility vehicles at Point Reyes National Seashore (CA) are in a fixed position — either mounted on the exterior near the winch itself or inside the cab. This prevents the winch operator from properly monitoring the operation. It can also prove dangerous. Should the cable of the exterior-mounted switch part under a heavy strain, it would whip back towards the operator.

Park Technician Boyd K. Burtnett suggested constructing a simple remote operating switch utilizing nothing more than a push-button switch, a length of ''zip'' cord and two alligator clips. Since more of these winches operate through a low-current relay similar or identical to the automotive starter relay, heavy-duty components need not be used.

The push-button switch is mounted on a small piece of wood and the electrical cord is hooked to each terminal. Alligator clips are attached to the cord. The cord can be any length desired and is wrapped around the mounting board when not in use.

To install the remote switch, hook the alligator clips to the relay terminals which lead to the fixed switch. This in no way interferes with the operation of the fixed switch for running the winch. Should the relay not be mounted in a convenient location for hook-up, the same effect can be achieved by hooking the alligator clips to the terminals of the fixed switch.

The safety of operating winches with fixed switches would be greatly improved with a remote switch because the operator would not have to be in a danger zone should the cable break and whip back. Because the operator is more mobile with a remote switch, the overall safety and efficiency of the winching operation is improved.

This device can also be used by automotive mechanics as a remote starting switch by hooking the alligator clips to the starter relay. This would mean that a second employee would not be needed to turn the engine over to line up timing marks, etc.

A $25 National Park Service incentive award was presented to Burtnett for his suggestion.

Winter Roadway Signing

Mount Rainier National Park, just outside Seattle in the northern Cascade Mountains, holds the world's record for measured snowfall—1122 inches. An "average" winter will bring approximately 650 inches to the Paradise area of the park. One of the more critical duties performed by Park Rangers throughout the winter months involves analyzing roadway conditions and signing the roads accordingly.

The three basic signs used to reflect roadway driving conditions are TIRE CHAINS REQUIRED, APPROVED TRACTION DEVICES REQUIRED and APPROVED TRACTION DEVICES RECOMMENDED. In past years the TIRE CHAINS REQUIRED sign was permanently affixed to a post and the remaining signs were placed back to back on a single metal sheet and hung on pins over the TIRE CHAINS REQUIRED sign as conditions dictated. This often meant handling a heavy, icy sign over one's head in windy, snowy conditions, and attempting to relocate the sign on 2 small pins near the top of the sign. When no signing was required the entire post and accompanying signs were rotated 180 degrees and pinned in place.

Recently Nisqually District Ranger Gerry Tays designed a new, safer sign that required no independent handling of signs and, consequently, no potential falling sign to injure the Ranger changing the signs. It simply involved making a book out of the sign. Engineering Equipment Operator Larry Hatcher welded each of the three signs to two short metal sleeves which fit over a central post. Each of the sleeves and the central post were drilled to enable the signs to be pinned facing the traffic or out of the way when not in use. All three signs may be pinned out of the way when no signing is required.

Wooden Barrels

The staff at Fort Larned National Historic Site (KS) is looking for wooden barrels to use as refuse containers. The barrels need to have removable lids with a hand hole, and need to be designed so that plastic bags can be inserted into the barrels without being seen from the outside.

They have contacted a private company that will design and produce the barrels if a sufficient number of barrels are ordered to make it feasible. If you have a specific design or if you know of someone already making this type of barrel; or if you are interested in obtaining them for your park area, please contact the Superintendent, Fort Larned National Historic Site, Route 3, Larned, KS 67550, telephone: 316-285-3571.

Mobile Ladder

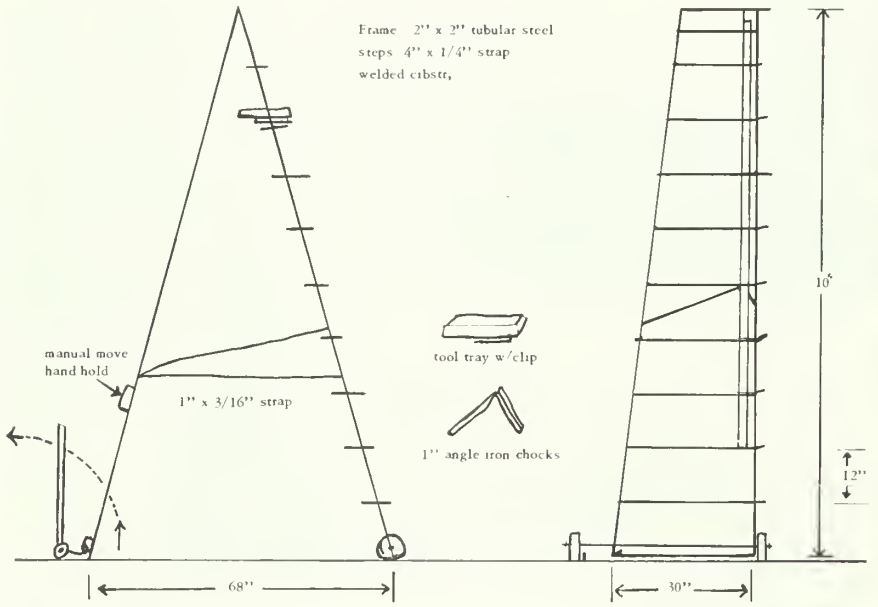
When new garbage packers were put into service at the Lake Mead National Recreation Area (AZ-NV), maintenance work on these 13 foot high packers had to be done by using stepladders or extension ladders which caused many moves and some unsafe conditions.

Weldor Ralph R. White built a mobile platform or ladder from which maintenance work could be accomplished safely without moving the ladders for each operation. This new ladder was based on the orchard ladders of the Northwest.

One leg is vertical to the floor, remaining the same distance from the truck side from top to bottom. The other leg is approxiately 22° from vertical for greater stability. The single support leg is opposite the vertical leg, also for greater stability.

For mobility, small wheels are placed on the ladder frame which raises the base of the ladder to not over an inch from the floor. The wheel on the angled leg can be moved out 8-10'' for greater base width. A small, removable dolly is attached to the support leg for easy moving. Vee-shaped wheel chocks are provided for both wheels. A tray for small tools can be snapped on any of the ladder steps.

Mechanic (heavy duty) John E. Katzenbach stated he had been using the ladder to service the packers and it saves approximately thirty minutes per packer. He says it is also much safer than a regular ladder because of the wide base created by the extendable wheels.



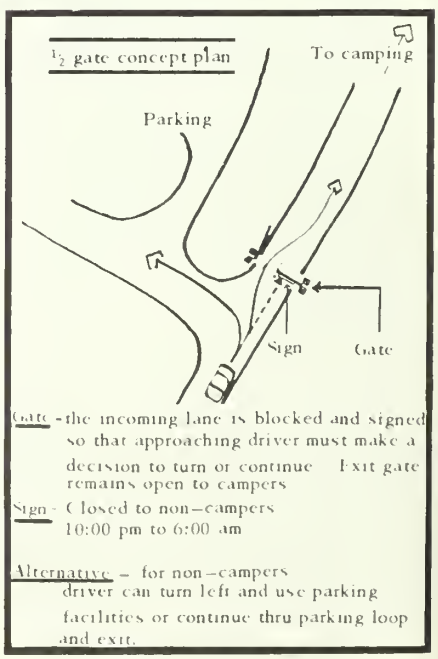
Half Gate Signing

Watercress Spring Recreation Area (MO) had a conflict with vehicles being driven through the camping area and disturbing the tranquility of the campers' outdoor experience. This situation was compounded by the fact that the road ''had always been open'' for local people to drive through and see what the campers were doing. This administrative problem was very sensitive in that public expectations had to be met for both the campers and the local people.

Efforts to typically sign the area with time restrictions were often ignored, and a solution to these problems was needed.

The Mark Twain National Forest staff developed a half gate system that informed all persons involved what the time restrictions were in such a way that no doubt or possibility of ignorance existed.

Soon after the installation of the half gate concept a few violation notices were issued and contested in the court system. In all cases the judgment was that it was not possible to enter the time restricted area without the vehicle driver being aware of the regulatory requirements. Soon after these court decisions supported the Forest Service position, the problems diffused and a more normal atmosphere of cooperation between campers and locals began to exist.



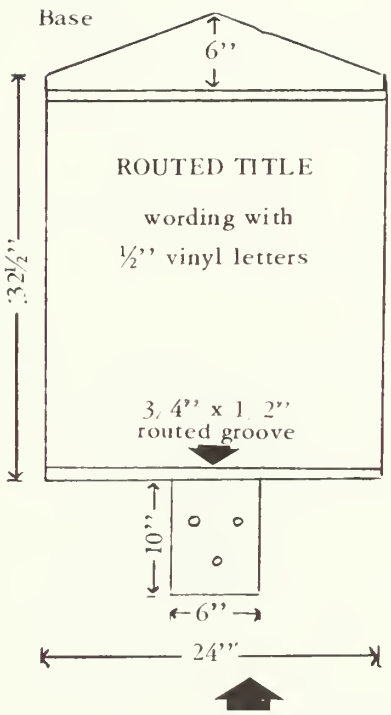
Historical Site Markers

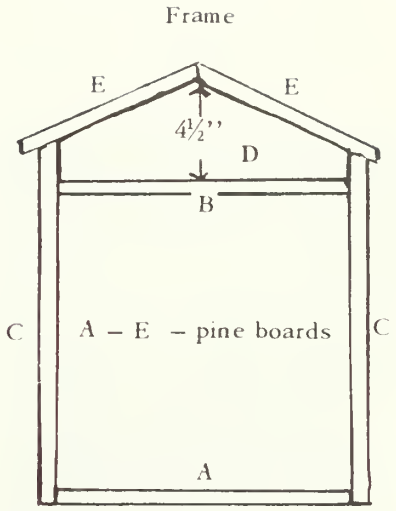
Greenwood Furnace State Park (PA) Superintendent Lawrence S. Hoffman contributed this design for an historical site marker which is totally enclosed for weather protection. All historical information was put on a board with ½'' vinyl plastic letters and covered with 6 coats of exterior polyurethane coating.

The only routing on the sign was the initial descriptive heading. Old shaker shingles were used for the roof and the door has a hand-made wooden sliding latch. Tuf-nuts were used to secure the sign to the post.

Lumber used for the sign was oak. The exterior is all ¾'' rough pine which was salvaged from an old building. The signs were installed on a 6 x 6 post cemented into the ground.

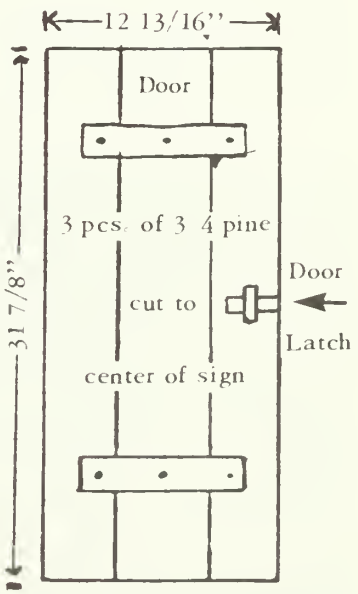
Hoffman said that by using the vinyl letters, they reduced the amount of time that the sign could be made and should the letters peel, you can replace them and recoat with more polyurethane.





2'' x 8'' oak boards cut to size and glued and clamped together.

Note: best to lay the 8'' or 6'' center board down first and glue together and cut roof peak after gluing.



Locating Underground Utilities (Part I)

General Engineer Wayne Veach of the National Park Service's Mid-Atlantic Region shares this method of determining the location of underground pipes which he learned from Chief of Maintenance Vic Martin of Petersburg National Battlefield (VA).

Required materials are two *steel* rods approximately 36'' long and 1/8'' in diameter. Bend each rod 90° at a distance of about 9'' from one end.

The rods are held by the short legs, one in each hand, short legs vertical and long legs pointed forward, horizontal, and parallel about a foot (comfortable distance) apart. One long leg should be held slightly higher than the other.

The method of support is very important since the rods must be free to pivot with little interference. The bend must be clear of the fingers and the fingers *cannot* grasp the rod. The rod is supported in each hand by one side resting against the forefinger and the other side farther toward the rod end against the middle of the palm close to the wrist. The palm of the hand is turned forward and the weight of the long leg holds the short against the palm so it won't fall.

It takes some practice to hold the rather delicately balanced rods parallel and horizontal while slowly walking. However, when the rods pass directly over the underground pipe, conduit or similar disturbance in the ground, the long legs will swing to *cross* each other. There is no way to determine how deep an object is, but the rods have detected pipe as far down as 20 feet. Veach says that for some reason, not everyone can do this, but for those who can it can be an interesting and useful tool. He also observed that when you closely approach another person, the rods will either cross or diverge. This method certainly works for Veach for he has determined the locations of direct burial electric power lines, drainage tile lines and underground septic tanks.

Locating Underground Utilities (Part II)

Landscape Architect Dennis Paul Fehler and Fire Management Officer James W. Martin of the Mark Twain National Forest in Rolla (MO) have another suggestion for locating underground utilities.

They suggest using a metalic, color-coded warning ribbon when installing a utility. This warning ribbon would be detectable from the ground surface (by metal detector, similar to what treasure hunters use) without the need for unnecessary mechanical disturbance. After installation an entire utility system could be plotted with flags on the ground surface and only the appropriate area be disturbed for repairs or additions. Also, the visual warning ribbon would warn those involved with inadvertent digging that they are in the immediate area where a utility conduit exists and that caution must be exercised.

This warning ribbon would prevent accidental damage to underground utilities and harm to those involved in the relocation process by providing an electromagnetic and visual warning marker of the actual utility trench location. It would also correctly identify underground situations so that future generations will know what is buried and the exact point-to-point path.

This idea would be especially useful for:

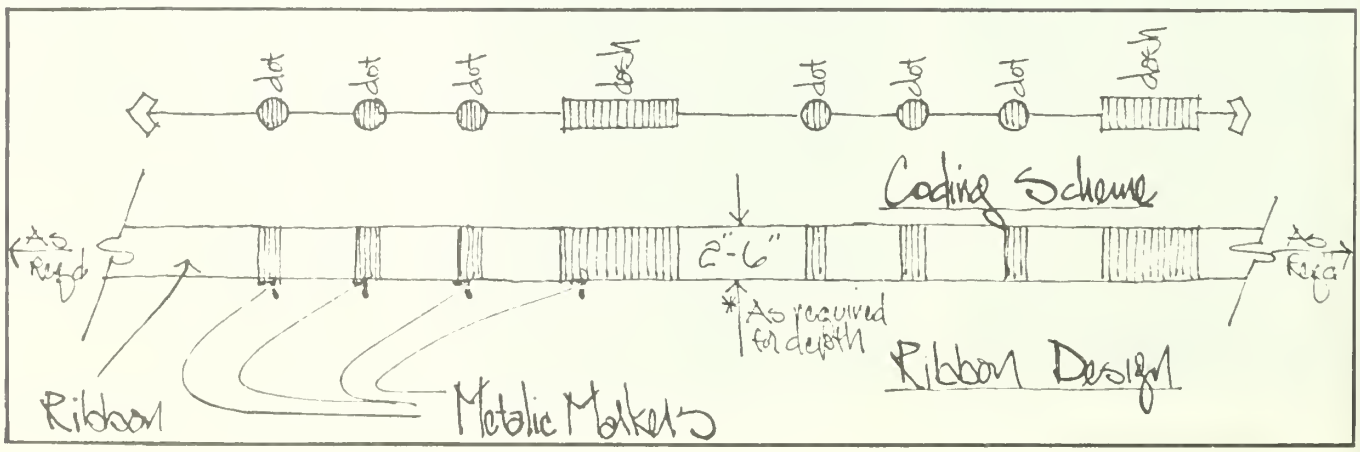
1) archeologist - to relocate boundaries of important sites or specific points such as shovel test. This would allow documentation of sites with special and appropriate artifactual warnings;

2) engineers - to provide necessary markings of all underground utilities;

3) landscape architects - to help relocate utilities when proposing design changes and when making new ground surface proposals;

4) foresters - to locate temporary corners, boundaries, etc.;

5) soil scientists - to locate soil pits for later evaluation.



Sand/Salt Storage Container

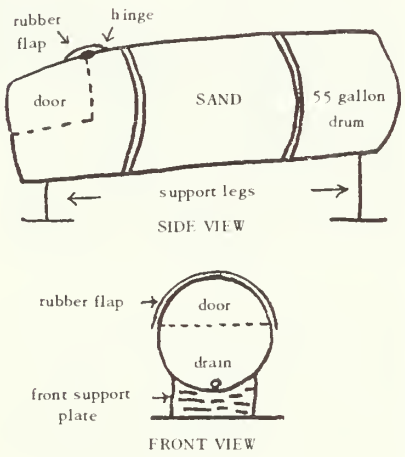
Storing sand or salt mixtures on steep driveways or dangerous hills to have ready during emergencies and inclement weather was difficult to do at Cuyahoga Valley National Recreation Area (OH). Although piles of sand were covered with plastic or canvas, strong winds would often blow the protective covering off and expose the sand to rain. In winter, the wet sand would freeze solid, making it impossible to shovel. Also, the piles would become buried under large accumulations of snow or drifts.

Maintenance Mechanic Foreman Kerry C. King solved this problem by constructing a storage container for a sand/salt mixture. King took an old 55-gallon drum and cut a section out of the barrel with a cutting torch. He welded one end of an old hinge onto the cut-out section and the other hinge's end to the barrel. He cut two pieces of sheet metal for the supporting legs and welded them to the underside of the drum. The longer legs were put in the back and the shorter ones in front for ease of loading and removing sand, and also for shedding water and snow from the container. He wire-brushed and painted the container and installed a rubber flap to shed water and seal the top joint. The entire construction process took approximately 3 hours.

The materials used were: A 55-gallon drum; two pieces of ¼'' scrap metal (16'' x 6''); one piece of old rubber floor mat (24'' x 8''); one hinge; 8 metal screws; and one pint of spruce green paint. All these materials were recycled junk except for the screws and paint which were purchased from GSA at a cost of $3.00.

King estimates a savings of approximately $2500 per year for the cost of wasted sand, travel time, labor for breaking up frozen sand, replacing torn or lost canvas, etc.

An $80 National Park Service incentive award was presented to King for his suggestion.



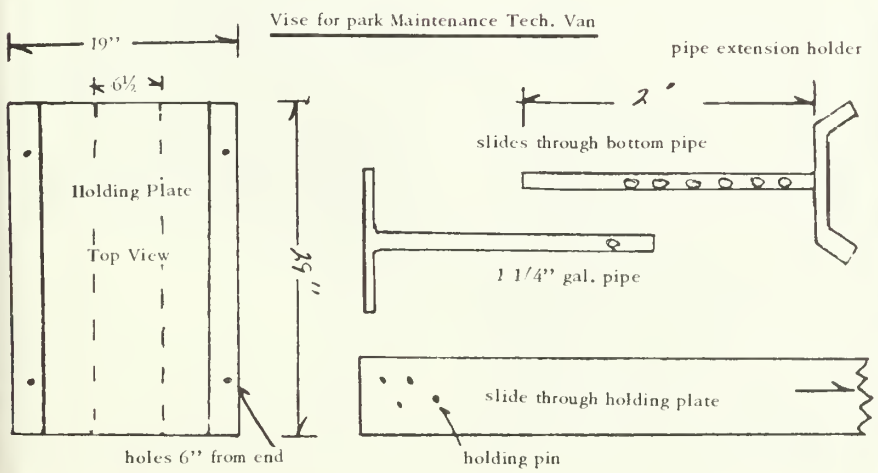
Chain Vise For Maintenance Technician's Van

Maintenance Technician Earl Slygh of Clifty Falls State Park (IN) needed a device to hold pipe while he was working in the field. When using pipe wrenches and pipe cutters, he found that they were too inconvenient when he tried to pull against each wrench.

Slygh had an old motor platform that was not in use. He cut a hole in which he could slide a 6'' piece of channel iron through and on this he mounted a small chain vise. It stands about 20'' off the ground.

Materials used were a 6'' x 5' channel iron, an 8'' x 2' channel iron plus one top screw chain vice (BC-410 rigid) for a cost of approximately $50.00.

This device saves gas and time by eliminating the need to drive back to the service area and is very convenient for on-site jobs.



Safety

Safety Award

Janet Edwards, NPS

Howard Chapman accepts Safety Award from Ronald Piescki.

The National Park Service was the recipient of the Secretary of the Interior's Annual Safety Program Award for 1982. This selection, in competition with other Department of the Interior bureaus, was made through a comparison of each bureau's improvement in its OSHA, injury, illness, accident, and motor vehicle accident rates for calendar year 1982. The award was presented in a ceremony at the Departmental Occupational Safety and Health Seminar at the Anaheim, California, Convention Center on March 21, 1983. Mr. Ronald Piescki, Director, Office of Acquisition and Property Management for the Department of the Interior presented the award for the Secretary. NPS Western Regional Director Howard Chapman accepted the award for NPS Director Dickenson.

In accepting the award, Mr. Chapman expressed the pleasure and pride in achievement by the National Park Service for this recognition. He acknowledged the efforts of all employees in the Service, but especially the safety community, in attaining the improvements in the NPS safety programs indicated by the award.

The award was formally presented to Director Dickenson at his staff meeting of May 27, 1983, by NPS Chief, Branch of Safety Management, Richard Wilburn.

This award is based on an improvement over a three-year period in the National Park Service accident rates. It represents a reduction in losses from damaged equipment and employee lost time from the job due to injury or illness. This reduction in losses is reflected in an increased efficiency in park operations as fewer hours of employees not reporting for work and equipment not being in a shop for repairs results in higher output.

Ranger Information and Safety

Grand Canyon National Park (AZ) attracts millions of visitors each year, many of whom come into contact with Protection Rangers. Protecting visitors is directly related to the information and knowledge the Protection Unit receives regarding criminal activities and identification. If a Protection Ranger knew descriptions of all major wanted lists (10-29's) in Arizona, better protection could be afforded for the Ranger and the visitor. However, there were no systematic or regular means of transmitting area-wide wanted lists to Protection Rangers.

Law Enforcement Technician Steven E. Schneider (formerly with the Grand Canyon NP) knew that the Department of Public Safety transmitted a 10-29 broadcast every morning regarding stolen vehicle descriptions and wanted felons. Schneider suggested that this daily broadcast be received through the Grand Canyon's existing teletype terminal without modifications or additions. The printout would be posted on the Ranger Operation Bulletin Board, thus providing vital information to the Protection Rangers.

Schneider's suggestion would enable the Protection Ranger to better prepare himself or herself for a potentially hostile situation; insure visitor safety by eliminating the visitors or the suspect from the arrest scene; increase morale among Protection Rangers by effecting good arrests; increase credibility with outside agencies; and enhance working relations with the immediate public.

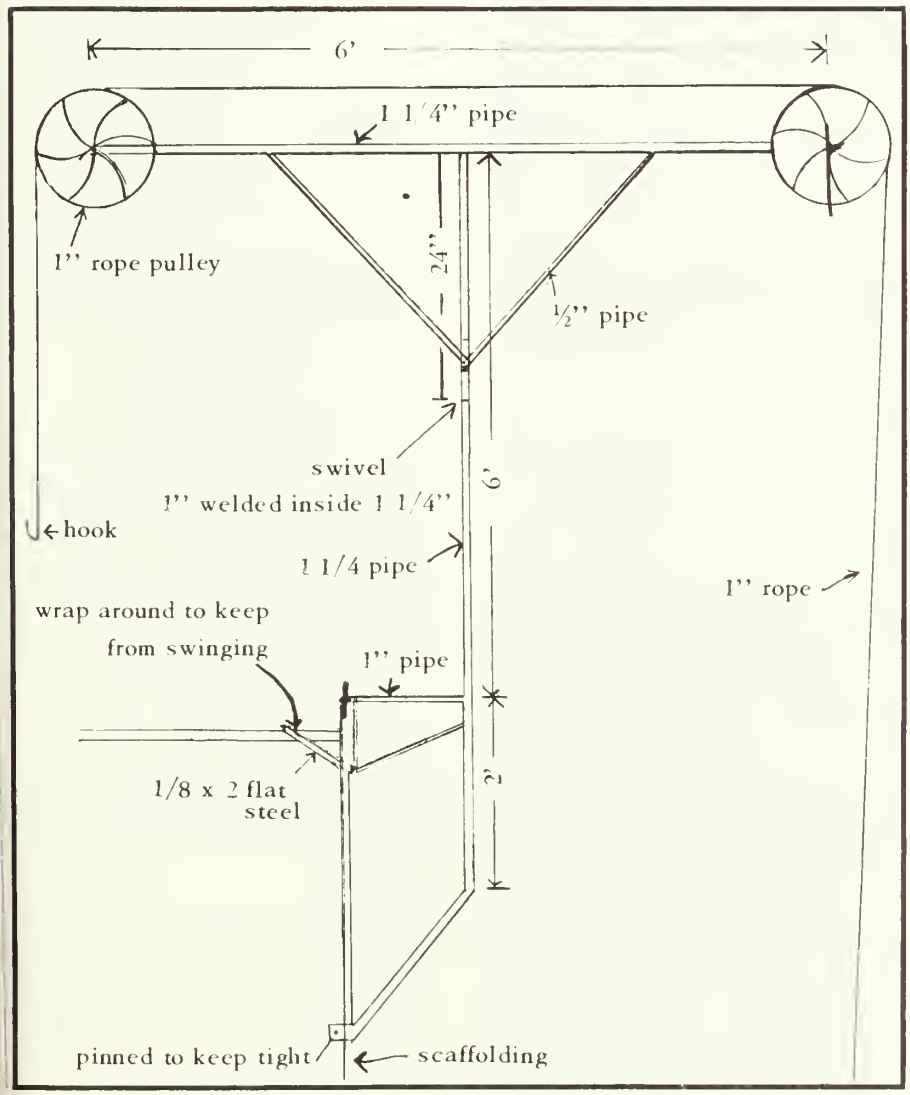
Scaffolding Safety

While working on a sectional scaffolding, William B. Kozlowski, masonry worker at Fort Larned National Historic Site (KS) realized a safety hazard existed when he used a single pulley and rope to pull up material. The pulley was attached to one corner of the scaffold and he had to stand underneath to hoist up material. Bricks could come loose and hit him.

If Kozlowski moved to one side to pull, the increased angle plus the weight of the material being hoisted tended to pull the scaffold over. Also, once the material was pulled up to working level, he had to reach over the safety railing to retrieve the often heavy load. This sometimes caused a loss of balance.

Kozlowski corrected this safety hazard by developing a swivel type "T" with pulleys on both ends. This provides the operator with ample clearance from falling material (up to 8 additional feet) and also enables the operator to swing the material in and onto the scaffold platform, thus eliminating the need to reach over the railing.

A $100 National Park Service incentive award was presented to Kozlowski for his idea.



Welding/Cutting Table

Seasonal Maintenance Laborer Burton L. Rust of Pipe Springs National Monument (AZ) constructed this handy welding/cutting table to use in the maintenance shop.

He first removed an old campsite grill from a fireplace. He cut 4 lengths of 1½" pipe to 32" and welded them onto the corners of the grill. He also welded a ½" nut on one leg 3" from the floor using a 4" carriage bolt. This serves as a leveling device for uneven floors.

This sturdy table took little time to construct and has proved highly useful in the maintenance shop.

Administration

Project Instruction Sheets

Mrs. Bernice E. Harris, secretary-stenographer with the National Park Service's Midwest Regional Office in Omaha, Nebraska, devised this efficient and effective instruction sheet for use in her office.

The instruction sheet is used on all correspondence and/or work projects by persons initiating the project. It eliminates lengthy and repeated discussions and provides documentation on exactly what is to be done, by and for whom, and the time frame involved. The reverse side can be used for further instructions if necessary. It can be easily modified to suit one's particular office situation or needs.

Mrs. Harris was presented a $25 National Park Service incentive award for her suggestion.

INSTRUCTIONS DATE _____

TO:

FROM:

NEEDED: M TU W TH F
1 2 3 4 5 6 7 8 9 10 11 12 13 14
15 16 17 18 19 20 21 22 23 24 25
26 27 28 29 30 31

TYPE Rough Final
Double Single

COPY NO: Xerox Staple
Reduce Cut-to-size

ACTION: Write/Respond Revise Input
Review Proof Sign Initial
Concur/Approve Discuss
Return Distribute Mail
File Suspense

ENCLOSE: Brochure Literature
Material Maps Incoming

_____ See other side

MESSAGE _____

Special Populations

The following ideas appeared in the May 1983 issue of An Accessible Heritage, a National Park Service newsletter which shares ideas for making the National Park System more enjoyable for handicapped visitors.

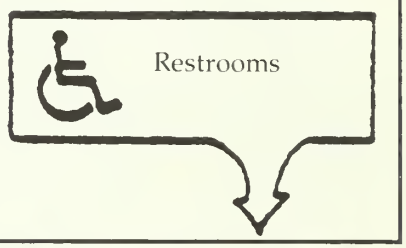
Park Brochure

Every park should have an accessibility guide that tells the handicapped visitor or potential visitor what is and is not accessible to him or her in the park. It is also good to put some of the information, even if only in brief form, in the park brochure.

In the event that the brochure will not be revised for some time, this can be done simply and inexpensively by ordering hand rubber stamps. For example, a small boxed statement with the wheelchair logo can be stamped in a convenient open space in the brochure's text.

Another way is to stamp some helpful information directly on the brochure map. Such messages can then be added in the next printing. In the meantime, a quantity sufficient for the handicapped visitors can be hand stamped as needed.

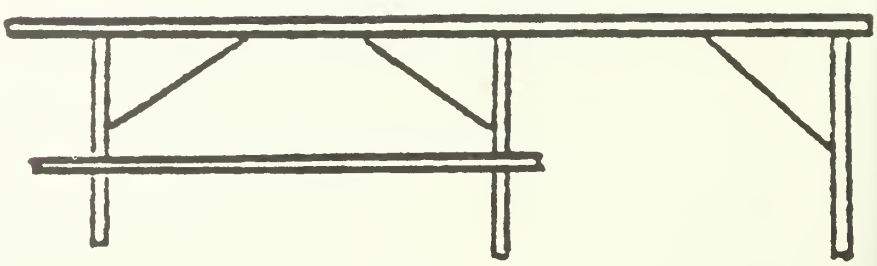
The visitor center is accessible to wheelchairs, as are the campground and the nature trail. Handicapped parking and curb cuts are found in most areas, and there are accessible restrooms at the picnic area.



Picnic Tables

The most common way to adapt a picnic table for wheelchair use is to extend the top 18'' to 25'', so that the chair can be pulled up to the extended side or end.

The C&O Canal National Historical Park has altered some of its tables by extending one end a full 48'' and adding another support at the new end. One chair can sit at each side, with another at the end, with space to spare.



National Park Service
U.S. Department of the Interior
and
National Recreation and
Park Association

GRIST

Winter 1984
Volume 28/Number 1

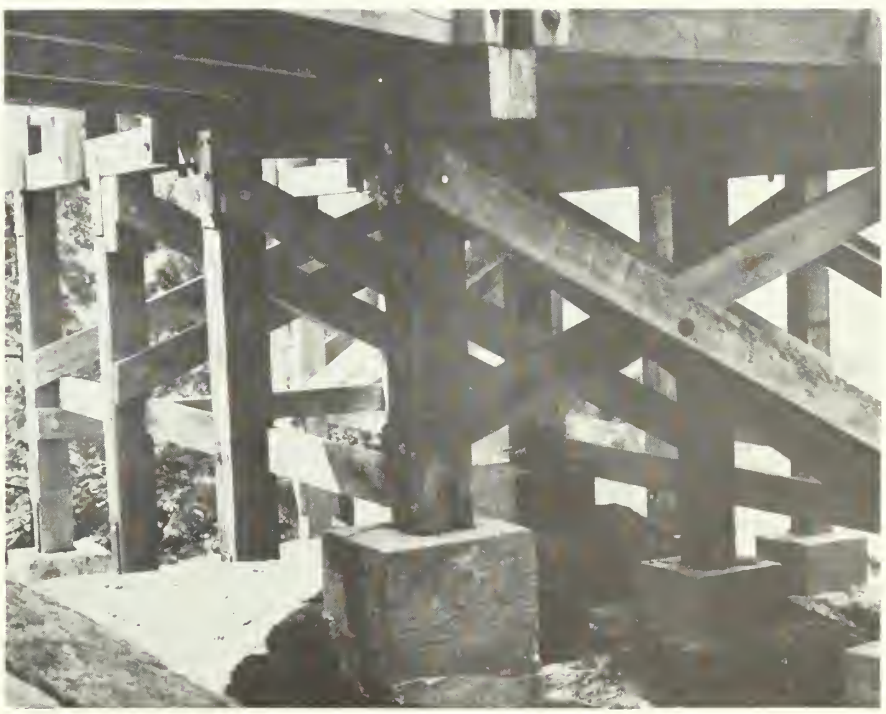
Gentle Trail and Overlook

Superintendent Robert Johnson of Blackwater Falls State Park in Davis, West Virginia, shares this trail and overlook with GRIST subscribers and readers. Credit for this structure goes to Superintendent Johnson, Daniel Pase, Construction and Maintenance Supervisor and Roger Evans, Carpenter Supervisor.

The paved parking area and paved trail leading to a wooden ramp and deck-type overlook permits handicapped and aged guests to easily view the spectacular Blackwater Falls in the bottom of the gorge. The length of the trail is approximately 150 yards and the total trail and deck is for all practical purposes, level. The decking is totally constructed of rough sawed oak lumber which is anchored into a natural stone out-cropping. The entire deck is enclosed by a 42'' high railing and especially built with wheelchairs in mind.

Except for labor, the construction of this overlook did not cost the State of West Virginia anything. All building materials, including bolts, nails, lumber, paving and even fill dirt were contributed by ten different companies and organizations. These agencies were eager to contribute when they learned of the nature of the project.

Often the main attractions of park and recreation areas are located in areas not accessible to handicapped persons. The staff at Blackwater Falls provide an excellent example of how park areas can provide enjoyment for all visitors at minimal cost while, at the same time, establish a network of concerned citizens and organizations to benefit all.



Safety

Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

Russell E. Dickenson, Director
National Park Service

John H. Davis, Executive Director
National Recreation and Park Association

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Membership in the Park Practice Program includes a subscription to all three publications and a library of back issues arranged in binders with indices, and all publications for the remainder of the calendar year.

The initial membership fee is $105; annual renewal is $45. A separate subscription to *Grist* is $20 initially, and $12 upon renewal. Subscription applications and fees, and membership inquiries should be sent *only* to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

The Park Practice Program includes: *Trends*, a quarterly publication on topics of general interest in park and recreation management and programming; *Grist*, a quarterly publication on practical solutions to everyday problems in park and recreation operations including energy conservation, cost reduction, safety, maintenance, and designs for small structures; *Design*, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

The information presented in any of the publications of the Park Practice Program does not reflect an endorsement by the agencies sponsoring the program or by the editors.

Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, Division of Cooperative Activities, National Park Service, Washington, D.C. 20240.

For Safety's Sake

All ideas and suggestions shared in the pages of *Grist* are presented as guidelines, not final working blueprints. Be sure to check any device or plan you want to adopt for compliance with national, state and local safety codes.

Light Bulb Safety Guards

During a recent management evaluation of El Morro National Monument, New Mexico, bare light bulbs were pointed out as a safety hazard. An attempt was made to purchase light bulb guards, but without success. One type of guard was available for purchase, but it would require replacing the entire light fixture.

Maintenance Workers Mike Varela and Willie Chatto put their heads and welding skills together and came up with their own version of light bulb guards. They used discarded grates from refrigerators and ovens for their materials. They bent the rods to the required dimensions and then welded or brazed them into place. One-quarter inch washers were welded on the base of the guards and used to secure them to the ceiling with metal screws. Black spray paint was then applied to finish the job.

Varela and Chatto estimate a savings of approximately $8.00 for each guard for not having to replace the existing light fixture. The purchase price for each new guard would be approximately $15.00.

Both Varela and Chatto were presented with a $25 National Park Service incentive award for their suggestion.

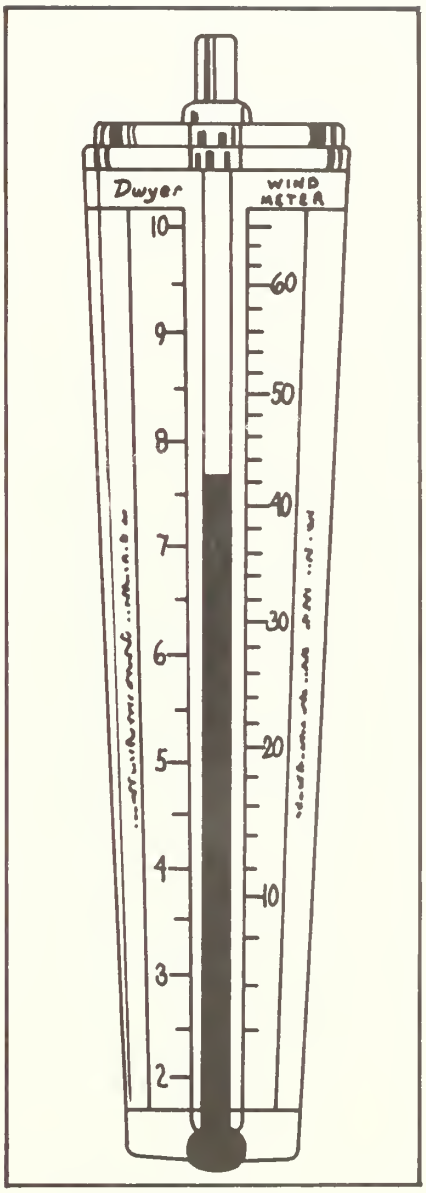
Wind Meter for Helicopter Landings

When helicopters land in the Grand Canyon National Park (AZ) the wind direction and velocity are radioed to the pilots by National Park Service and YACC personnel who are sometimes inexperienced in judging true wind conditions. This creates a potentially dangerous situation for the pilot, passengers and ground crew.

Blacksmith/packer David B. Smith suggested equipping backcountry camps frequently used for helicopter landings with Dwyer portable hand-held wind meters. This would eliminate the need for ground crews to have to estimate the wind velocity. These units are inexpensive, compact, durable, easy to use, and would greatly enhance the safety factors for the pilots.

Smith also suggests that additional units be purchased and kept in the rescue cache for use in inner-Canyon search and rescue operations where helicopters are often required to land in hazardous places and under hazardous wind conditions.

Smith received a $50 National Park Service incentive award for his suggestion.



Wind Meter

Wheelchair Seatbelts

Visitors to Carlsbad Caverns National Park, New Mexico, occasionally use a "loaner wheelchair" provided by the National Park Service. Since most of the visitors using the wheelchair are familiar with its limitations, there is only a slight possibility for accidents to happen. However, when park employees would use the wheelchair to transport visitors out of the cavern, the possibility of visitors falling out of the wheelchair existed.

Park Technician Ronald P. Merrill suggested placing a seatbelt on the wheelchair. He suggested a belt with webbing fabric with a small fastening buckle rather than a large one and to be of the same color as the wheelchair. The seat belt would provide security to the person in the chair and could reduce the possibility of an accident occurring.

Merrill received a $25 National Park Service incentive award for his suggestion.

Air Pressure Warning Device

James R. Ervin, Laborer of Carlsbad Caverns National Park, New Mexico, suggested that the dump trucks and vehicles with air brakes in his park be equipped with an audible warning device to alert the drivers to loss of air pressure if the pressure falls below a safe level.

Although these vehicles have a pressure gauge, if the driver is not paying close attention the air pressure could be lost without the driver realizing it. The audible warning device would be an added precaution against the loss of air pressure and could prevent a serious accident.

Ervin received a $25 National Park Service incentive award for his suggestion.

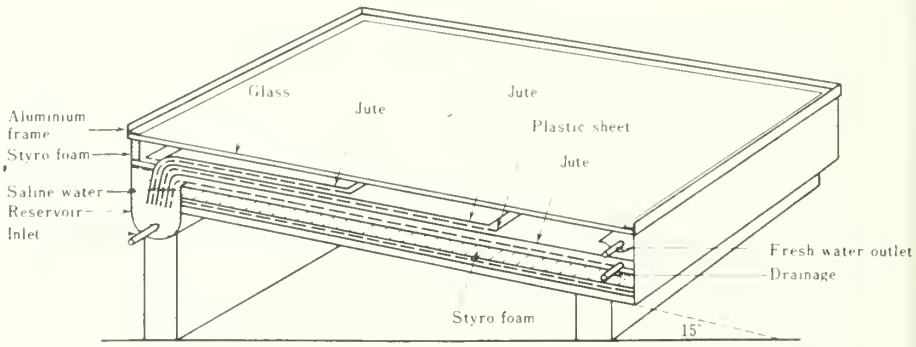
Energy Conservation

Drinkable Water with Sun's Help

In regions of the world where there is no regular supply of drinking water, the distillation of locally available brackish-water may be a viable alternative to fresh water supplies carried long distances by truck or pipeline. Such distillation could be done using solar radiation, which is well suited to the task in spite of it being a low grade source of energy. Basic solar distillation equipment also tends to be simple and easily maintained and is therefore usually appropriate to the technological level of areas where it can be most useful.

A solar still of simple design and construction has been developed at the Center for Energy Studies of the Indian Institute of Technology. The following description is adapted from one of a series of reviews specially produced for the UNU Fellows who study or carry out research at the Center.

The multiple wick solar still consists basically of a unit of two aluminum frames enclosing a sheet of glass covering several interspersed layers of jute cloth and plastic sheets. The overlapping layers of jute cloth, dyed black to absorb radiation and separated by sheets of black plastic, have their upper ends dipped in a reservoir of saline water. The capillary action of the jute cloth sucks up the saline water, which then flows down the length of the cloth under gravity to the end of the cloth which is exposed to the sun's rays. These exposed ends provide a continually wetted surface from which the water evaporates.



A constant water level maintained in the reservoir and a trough along the lower wall collects the distillate. A copper tube provides an outlet for excess saline water.

The solar still is light and easily portable. The daily yield is significantly higher than basin type stills and it can be built for about half the cost of conventional stills within the same area. On a typical cold sunny day in Delhi, India, the distillate output was 2.5 litres per m_2 daily corresponding to an efficiency of 34 percent.

Other advantages are that it can be oriented to any angle to receive maximum solar radiation and salt forming on the blackened cloth can be brushed off easily.

Solar Distillation, *1982, by G.N. Tiwari and M.A.S. Malik, published by Centre of Energy Studies, Indian Institute of Technology, New Delhi, India, for the UNU Fellowship Programme.*

Reprinted from United Nations University Newsletter, Vol. 7, No. 2, May, 1983.

Solar Collector

The Visitor Center, administrative buildings and residences at El Morro National Monument (NM) are heated by #2 fuel oil. This oil is expensive to purchase and takes a large portion out of the Monument's operating budget.

Budget Clerk Lowell T. Back proposed the purchase of one Hansolar TA-3 Solarcollector to mount on the roof of the Supervisory Ranger's office. Three people occupy this office which is difficult to heat because it is farthest from the oil furnace.

Since there is abundant year-round sunshine at El Morro, Back felt that the office could be totally heated by this solar unit. These units are simple to install and require little or no maintenance (they only have a blower unit to maintain). Also, the units are particularly suitable for older buildings since very little modification needs to be done to the structures.

Back estimates that a single

Continued on page 5.

Administration

Continued from page 4.

solar panel unit would save about 70 gallons of oil. At $1.15-$1.25 per gallon, a first year's savings would be approximately $80.50. In approximately 5 years the unit would pay for itself.

A $100 National Park Service incentive award was presented to Back for his suggestion.

Mailing Procedures

Since its inception in January 1980, the new San Antonio Missions National Park has followed normal operating procedures of mailing out job vacancy announcements in franked 9½''x 12½'' kraft brown envelopes. Normal distribution of a vacancy announcement is made to the local community, Regionwide and/or Servicewide. The average distribution per vacancy announcement is approximately 500 copies.

Personnel Assistant Delia C. Arzola saw a way to reduce the cost to the National Park Service when distributing these announcements. Since each vacancy announcement contains a franked return address and postage fees paid indicia on the last page of the announcment, she suggested folding the announcement in half, stapling it closed and putting a mailing label in the appropriate space on the announcement. This process would eliminate the time-consuming process of reaching for an envelope, opening, stuffing and sealing the envelope.

It would also provide a considerable savings in postage fees for the park by eliminating the weight of the envelopes. Weight of 500 (9½'' x 12½'') empty envelopes is approximately 20 lbs. versus 2 lbs. for 1 ream (500 sheets) of 8½'' x 11'' paper.

Further, by using the announcement as a self-mailer, the park would not need to order and store as many envelopes as it had previously, and would provide a more effective, efficient and timely method of distributing job vacancy announcements.

A $25 National Park Service incentive award was presented to Arzola for her suggestion.

Vehicle Checklist

General Services Administration (GSA) vehicles are used at Lassen Volcanic National Park (CA) to transport people and materials. When these vehicles are received by the park staff, the vehicles are often in a less than perfect condition, and some have missing parts or are damaged. There was no method of keeping track of damage or missing parts. When the vehicle was turned in for sale some two years later, one had to rely upon the memory of someone at GSA or the person who initially picked up the vehicle as to its original condition. Often these key persons could not recall the condition of the vehicle or were no longer employed there. Therefore, the park had to pay for any repairs that GSA deemed necessary to sell the vehicle. This same situation occurred when the park staff received seasonal vehicles in a used condition and returned them in the fall of the year to GSA for redistribution in the local area.

Shop Leader Philip M. Youngblood, formerly with Lassen NP, solved this problem by developing a vehicle checklist to aid in the inspection of vehicles when they are picked up at the Motor Pool. Each person who signs for a vehicle uses this form to inspect and record the

Continued on page 6.

Continued from page 5.

condition of the vehicle prior to signing. There is a space for two signatures on the form — when all deficiencies are agreed upon, the form is signed by both the person who picks up the vehicle and the person who releases the vehicle from the Motor Pool.

This is a method of establishing a fair and accurate record of the condition of each vehicle before and after use by park staff. It also eliminates the payment of unnecessary or unjustified repair bills by Lassen NP.

Youngblood received a $25 National Park Service incentive award for his suggestion.

LAVO-65
(3/81)

GSA VEHICLE CHECKLIST

INSTRUCTIONS: This form is to be taken to the GSA Motor Pool by any employee picking up a GSA vehicle. Note any missing parts, accessories or damage on this form. After the form is completed, it must be signed by the employee and the GSA representative. GSA may Xerox the completed form if they wish. Return the original of the completed form to the Lassen Park Shop Foreman.

Vehicle License No. _____ Type of Vehicle _____

Date Received: _____ GSA Representative _____

Date Returned: _____ NPS Representative _____

	HOLES	DENTS	BROKEN	MISSING	OK
JACK					
CHAINS					
SPARE TIRE					
ACCIDENT REPORT KIT					
FRONT BUMPER					
FRONT GRILL					
WINDSHIELD					
WINDSHIELD WIPERS					
LEFT FRONT QUARTER PANEL					
LEFT DOORS					
LEFT REAR QUARTER PANEL					
REAR BUMPER					
TAILGATE (stationwagon)					
TAILGATE (pickup)					
TAILGATE LATCH MEC/PU					
REAR END					
TOP					
WINDOW GLASS					
RIGHT REAR QUARTER PANEL					
RIGHT DOORS					
RIGHT FRONT QUARTER PANEL					
CONDITION OF TIRES					
PICKUP CAB					
BRAKE LIGHTS					
PARKING LIGHTS					
TURN SIGNALS					
HEAD LIGHTS					

COMMENTS: _____

NOTE LOCATIONS OF ANY MISSING PARTS, ACCESSORIES OR DAMAGE ON DIAGRAMS ON REVERSE.

Identification for Volunteers-In-Parks

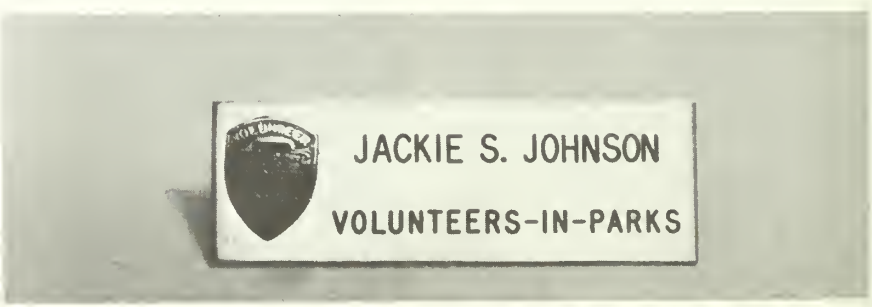
Chief Ranger Reed Johnson of Hampton National Historic Site in Towson (MD), developed a method for more easily identifying the Volunteers-In-Parks (VIPs) who work at the site.

Using the National Park Service non-uniform namebar as a model, Johnson designed a similar namebar for the VIPs. The namebars are made of polished brass, with the VIP's name located near the top center of the tag and the words "VOLUNTEERS-IN-PARKS" inscribed directly below the name. To the left of the name, the traditional metal VIP insignia pin has been soldered to the namebar, creating a highly visible and attractive identification for the Hampton VIPs.

The cost of the namebars is approximately $5.50 each, making them comparable in price to the NPS namebars. In addition, by having the NPS supply the manufacturer with the VIP insignia pin, costs are kept to a minimum.

Although Hampton NHS has a very large VIP staff (over 40 members), the majority of these volunteers have been associated with the site for several years. This reduces the problem of having namebars personalized and subsequently losing that person's services. If and when a VIP does leave, his or her namebar can be recycled at a minimal cost.

For those areas that have long-term service from their VIPs, the namebars provide an immediate and attractive identification of volunteer personnel. An added advantage is the boost in morale created by the personalized tags. It indicates to the volunteer that his or her efforts are truly appreciated and that each VIP is a vitally important part of the operation.



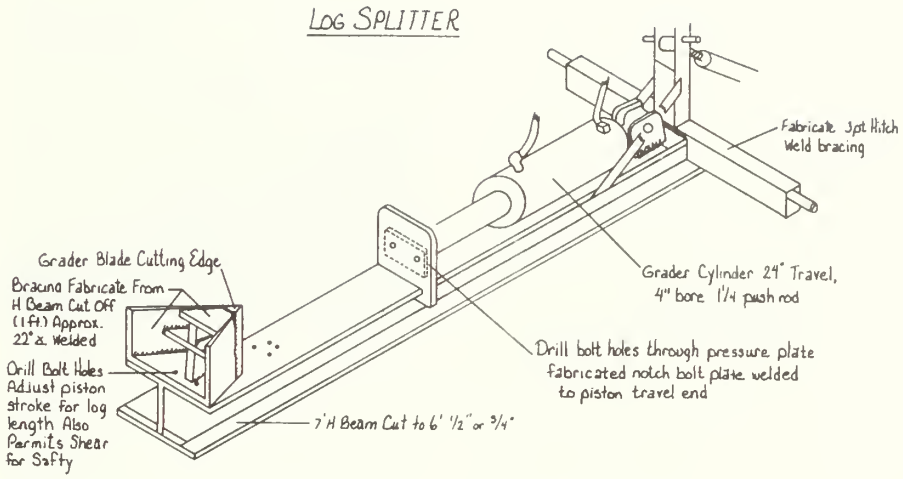
Log/Firewood Splitter

Labor Foreman II Thomas C. Miller of Shawnee State Park (PA) developed this log or firewood splitter. It is constructed from steel and hydraulic cylinder salvaged from various scrapped machinery which can be adapted to function from any maintenance tractor with hydraulic pressure in excess of 1500 PSI.

An 8'' x 8'' x 7' H beam was donated by a local steel yard that would, if purchased, cost about $60. A hydraulic cylinder which can have a 4 or 5'' bore but should have at least 18'' stroke with 1¼'' push rod should be able to be obtained from any old scrapped grader or tractor. Hydraulic hoses should be of double steel wall construction to guard against breakage which could cause possible injury to the operator. The cost of hose and fittings is approximately $116 at a local automotive store.

It took 16 staff-hours for the welding and cutting and the hitch and bracing were done with scrap iron on hand around the park.

In the past, firewood was cut for the superintendent's residence and maintenance building, thus saving the ever-increasing cost of heating oil and electricity. Cutting was done by chain saw, splitting maul and wedges which can be very time-consuming and extremely dangerous. Since the log splitter was constructed by park personnel and many scrap materials were used, the cost is approximately half that of one purchased from a dealer. Commercial splitters vary from $400 to $1200.



Trailor Anchor

Each year the maintenance staff at Lassen Volcanic National Park in California moved a seasonal trailer into the park to use as housing. The trailer had to be leveled and it would often fall off the jacks which created a hazard for the workers. Also, the possibility existed that the trailer would fall over the bank nearby.

Maintenance Mechanic Michael E. Kain suggested digging a 2-foot hole, placing an anchor in it and pouring it full of cement to hold the anchor securely in place. The trailer would be tied down to the anchor so it would not move when the maintenance staff was blocking it up. Also, it would not shift throughout the summer.

Four such anchors were put in place to hold the trailer and the safety hazard has been eliminated. Also, the time involved in setting up the trailer has significantly decreased.

Kain received a $25 National Park Service incentive award for his suggestion.

Temporary Trash Storage

Trash pick-up in the off-season months of September through March in the Virginia district of Assateague Island National Seashore requires two trips to the dump at Wallops Island per week. Although there is not a lot of trash collected on these trips, if left in bags on a truck to accumulate, the seagulls and rats will tear open the bags and scatter the trash, creating an unsanitary and unsightly mess. It is also a waste of time and fuel.

To improve the situation George R. Turlington, Heavy Equipment Operator, suggested building an inexpensive wooden box to store trash until a sizeable load is accumulated. Then using a forklift, he would put the box on the stake dump truck and haul it to the dump in one trip. This method considerably reduced the amount of fuel used, and wear and tear on the vehicles.

The box should be built on skids and should measure 7′ wide, 8′ deep and 4′ high. It should have a covered top and doors on the front to allow for quick dumping. It should be built out of wood to avoid the problem of rusting that conventional dumpsters incur. The whole unit can be built by 2 persons in about 2 hours and costs approximately $80 for materials. It would pay for itself the first month and generate a savings thereafter.

Turlington was presented a $100 National Park Service incentive award for his suggestion.

Boundary Signs

In locations where public roads enter Big Thicket National Preserve lands in Texas, there was nothing to indicate where the National Park Service boundary crosses the road. This creates problems for the visitor as well as patrol rangers, particularly at night. Park Ranger Alfred De La Cruz felt a sign placed next to the road would be highly visible and would indicate what unit of the Preserve a visitor is in.

De La Cruz suggested placing signs on the boundary where it crosses a road. The signs would be two-sided with one side reading: entering (name of unit), Big Thicket National Preserve and the other side reading Leaving (name of unit), Big Thicket National Preserve. The signs could be made by the existing sign machine at Big Thicket using vinyl coated sheets that were already in stock. The sign could be stapled to a piece of plywood which would be bolted to an angle iron frame. This would then be mounted on 2″ steel pipe. The signs would stand 60″ from ground level to the top which is approximately eye level on a standard size pickup.

De La Cruz pointed out that the signs could possibly be subject to vandalism such as being shot at, but they could be easily replaced by restapling another sign on.

A $150 National Park Service incentive award was presented to De La Cruz for his suggestion.

Protecting Traffic Counters

Field Traffic Counters (Vehicle or Pedestrian) are normally installed by hiding the counter housing behind a tree or bush and/or by anchoring the housing to a stake driven into the ground, or to a fence post, or even by chaining to a tree, etc. These methods generally leave the counter housing open to vandalism and/or theft.

Visitor Protection and Services Technician Ken Mabery at Chaco Culture National Historical Park (NM) recently constructed this handy subterranean protection box.

1. Dig out a hole in the ground the desired size for pouring concrete.

2. Construct a frame that will have interior dimensions of a box that is at least twice the size of the traffic counter housing (larger if desired).

3. The top of the box that will hold the counter and at least the rim of this box should be constructed of steel to prevent vandalism. The lid should have a hasp for a padlock.

4. Place a large piece of flagstone or cinder blocks in the earthen hole at the desired depth for the floor of the box.

5. Place the box frame in the hole (lid already attached to the rim).

6. Place a piece of PVC or metal pipe through a hole in the frame and angled up to the surface. Interior pipe diameter should be slightly larger than the rubber tubing or electrical wires.

7. Pour concrete in the earthen hole, around the frame. The grade of the concrete should be slightly higher than the surrounding terrain in order to keep sand and dirt from sifting in.

Coloring in the concrete will help it blend in with the terrain. Use steel that will rust, thus blending more than stainless steel. This box can also be used for extra battery storage, additional rubber hose storage, and tools, depending on how much larger than the counter housing the box is made.

In 1979, three counters were lost due to theft, and approximately 15 incidents of vandalism to these counters were experienced. Costs of repairs and/or replacement in one year totaled approximately $600. However, since Mabery designed and installed these subterranean boxes, there has been no loss. Also, the need for routine maintenance has decreased since all the mechanical parts of the counter are out of the weather. Trips back to headquarters for maintenance supplies have been eliminated with on-site storage.

Mabery received a letter of commendation for his suggestion.

Attachment for Cleaning Leaves from Ditches

Each year, beginning in early Spring, the maintenance staff at Shenandoah National Park (VA) has to pick up leaves from ditches along the park drive which is nearly 32 miles long in the North district. This was accomplished by using two dump trucks and drivers plus two additional persons working in the ditch with each truck using pitch forks to remove the leaves by hand and put them in the trucks. They also had to clean out inlets and culvert pipes. This long process took approximately 6 weeks for 6-7 workers.

Engineering Equipment Operator (Leader) Jerry L. Henry and Motor Vehicle Operator Terry P. Bell greatly improved upon this process by developing a simple attachment that was installed on a Ford loader, which is also equipped with a four-way bucket. Their attachment is the same width as a normal ditch line. They have a section of 2½" pipe which fits over the bucket's cutting edge that allows the bucket to slide over the grass along the shoulder without disturbing the grass.

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The attachment fits both sides of the bucket. The loader is used in the ditch to push the leaves from one inlet to another. After many piles of leaves are made, they drop off the attachment and start picking up the leaves. There is very little hand work to be done. The ditches are graded and the mowers can mow the shoulders and slopes much easier.

By using Henry's and Bell's attachment, the park realized a savings of 500 staff-hours. At a cost of $8.574 per hour, the savings total $4,287.00 for one district (there are 3 districts in the park).

The attachment also shaped the ditch which saves time and money by the staff not having to grade the ditches with the grader. It also protects the sod on the road shoulder and saves on the cost of hydroseeding.

Henry and Bell each received a $200 National Park Service incentive award for their suggestion.

Removing Graffiti

Park Ranger Jeffrey Lynn, with the National Park Service's Coulee Dam National Recreation Area (WA) patrols approximately 80 miles of water on the Franklin Delano Roosevelt Lake in eastern Washington state.

One of the many problems he encountered while on boat patrol deals with graffiti. Much of the lake has sandstone and/or clay cliffs bordering the water. Visitors to the recreation area continually carve their names or "phrases" into the cliffs with branches, driftwood or rock, thus creating an unsightly appearance to this area. Where there were only a few words or names Lynn raked off the graffiti, smoothing the rake tracks with the flat side of the rake.

In areas where there was a lot of writing, a rake would take too long. Also, some of the writing was so high up on the cliff that Lynn could not reach it with a rake.

Lynn requested the aid of the District's Fire Control Officer, Ranger Walter Yewdall and Biologist, Ranger Tim Finger. Together they took the District's skid-mounted, portable fire pump by boat to the affected areas. They ran the pump from the boat and put a man on the hose on shore. Since the pump has an adjustable pressure regulator, they were able to use a low setting to remove the graffiti embedded in the sandstone and they increased the pressure for those words embedded in clay.

Lynn's idea worked beautifully. The pump took the graffiti off the cliff walls and left them natural-looking. Compared to the rake, the pump worked faster, more effectively and resulted in a more natural look to the walls.

Before

During

After

NSPR "Best of Grist" Awards

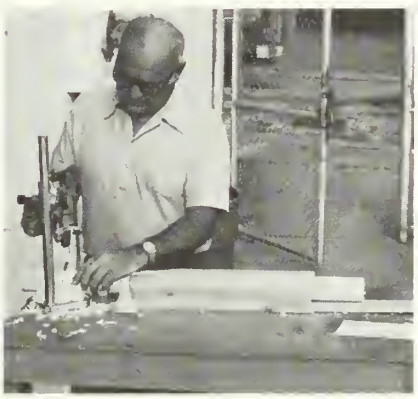
The 1983 National Society of Park Resources' (NSPR) Best of Grist Awards were announced at the NSPR banquet held in October 1983 at the annual NRPA Congress in Kansas City, Missouri. These certificate and cash awards are presented each year to recognize the most outstanding contributions to GRIST. The award-winning contributions were selected by the NSPR Park Practice Committee headed by Jeff Bourne with the Howard County Department of Recreation and Parks in Ellicott City, Maryland. The contributions were taken from GRIST issues covering the period July 1982 through June 1983.

Everyone throughout the park and recreation community is encouraged to share his or her innovative developments and adaptations with GRIST subscribers and readers. You just may have an award-winning idea!

First Place Award ($200)

"Filter Tubes for Swimming Pools"
by Gregory L. Roth and Dean Corl

Parks Supervisor Roth and Crew Foreman Corl of the Centre Region (PA) Parks and Recreation Department developed and built their own fiberglass mesh filter tubes for one of their municipal pools to replace old tubes that had collapsed in the diatomaceous earth filter. Their new tubes were made of 2" schedule 40 plastic pipe. Approximately 1,000 holes were drilled into a length of 35" pipe. Then the ends from old tubes were glued on with epoxy and the old filter tube covers put on. These tubes provided a considerable savings to the department. This article appeared in the Jan/Feb 1983 issue of GRIST.



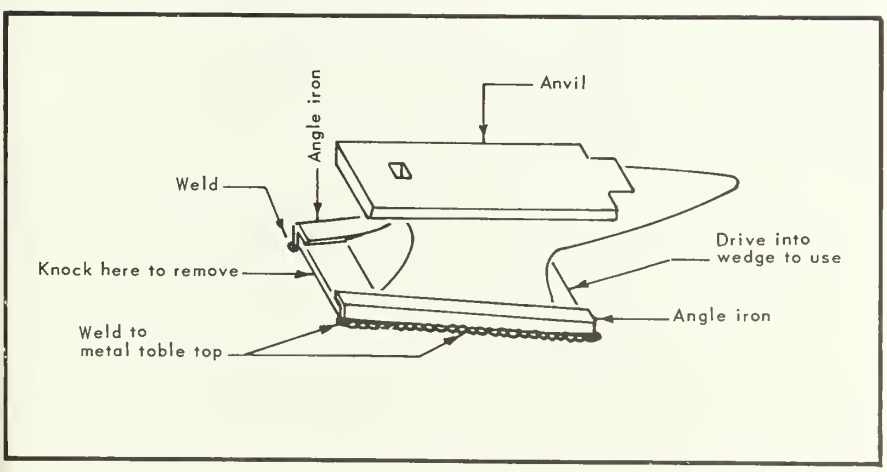
Second Place Award ($125)

"Removable Anvil Mount"
by Dale Miley

Maintenance Worker Miley at George Rogers Clark National Historical Park (IN) devised a removable anvil mount by forming a dovetail-like mount welded to a table top and form-fitting a piece of angle iron to the curved base at each of the long sides of the anvil. The angle iron strips were welded to a corner area of the table top.

Miley's device provides a firm and secure mounting for a 100-lb anvil so that the anvil cannot fall from the table and cause serious foot injury or floor damage.

Miley's contribution appeared in the Jul/Aug 1982 issue of GRIST.



Third Place Award ($75)

"Better Turf Management Through Reduction of Cost for Sod"
by David Frioud

David Frioud, Division Director of Parks with the City of Dunedin, Florida, shared an experiment with GRIST subscribers and readers which resulted in considerable monetary savings and improved aesthetics of Dunedin's park areas. The grounds maintenance staff at Dunedin restored the turf at their athletic sports complexes by taking native Bermuda sod and placing it in sparse areas of their ball fields. They laid over 90,000 square feet of sod at various athletic fields which provided excellent field conditions. This Bermuda sod (genus - Cyndon, species - Dactylon) flourishes very well in Florida. It is apparently resistant to mole crickets, sod webworms, funguses and diseases. Also, it seeds throughout the months of May through September and each stalk has hundreds of seeds so the propagation characteristic is ideal.

As part of their regular maintenance process, they also have sludge trucks from the pollution control plant dump liquid sludge on the ball fields. Since the sod experiments proved so successful, they have established a sludge application schedule for all their athletic fields. The results from the sludging of the fields were outstanding.

Frioud's article also appeared in the Jul/Aug 1982 issue of GRIST.

U.S. Department of the Interior
National Park Service and
National Recreation and
Park Association

Grist

Summer 1984
Volume 28/Number 3

Cool temperature- preferring annual phlox fill flower beds at Disney World.

Coloring The Park

by Ann Reilly

At the Milwaukee County Park, flower beds are filled with a bright mixture of ageratum, marigolds, coleus, zinnias and other annuals. At a relatively new downtown park, Seattle Center, the opposite design approach is used in some of the beds by creating a solid mass of color with the planting of all the same variety of marigold (although any annual will give the same effect depending on your color scheme). At Cypress Gardens in Florida, bright begonias or impatiens are chosen for the shade areas under the palms and cycads. At Disney World, cool temperature-preferring annual phlox fill flower beds in the spring and are replaced by more heat tolerant annuals such as vinca, zinnia or petunias when summer comes.

All of these parks are treating their annual flower selection in a different, yet perfectly correct way. They are choosing plants based on their preferences for color and design *and* for their special circumstances such as hot or cool; wet or dry; sun or shade. There are many considerations to be made when designing an annual flower bed—location color and color harmony; plant height; contour of the bed; style; shape of the plant; flower and leaf texture; and accents. In addition to all of these, plant selection is critical. If you don't choose annuals suitable to your growing conditions, all of your design efforts will be for naught.

Even if Mother Nature doesn't cooperate with much rain and you have no irrigation system, annuals can still color up the park provided you choose the right types. For a touch of blue, violet or white in a low growing plant suitable for small areas or

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as an edging to larger plants, select the tiny and fluffy flowered ageratum. One of the best annuals for ease of maintenance, ageratum will bloom non-stop in sun or light shade without having to have its faded flowers removed. Growing 6 to 12 inches high, it is an excellent complement to another drought tolerant annual, the zinnia, which is available in almost any color of the rainbow except true blue. While drought tolerant, ageratum does not like excessive southern heat. Try the varieties Blue Blazer, Blue Puffs, North Sea, Blue Danube or white Spindrift.

Zinnias

Zinnias are a world unto themselves. There are single, double cactus and pom-pom flowers available in solid, multi or zoned colors that bloom in full sun from early summer through frost. Faded flowers will need to be removed, however, to keep bloom at its maximum, so you would not choose zinnia if maintenance causes problems.

Clip stems as blooms open and zinnias make perfect and long lasting cut flowers for the office or reception area. Different varieties of zinnias grow anywhere from 6-inches to 3½ feet tall, so are useful as edgings, in massed beds, or as backgrounds. Best among the lower growing zinnias are the Peter Pan, Pulcino, Short Stuff or Thumbelina series.

One precaution must be taken when thinking of zinnias; make sure the location being considered has good air circulation as zinnias are very susceptible to powdery mildew. Don't plant them at the bottom of a hill! A spritz of Tersan 1991 onto the zinnias when the turf is being treated will assist in alleviating this problem.

Petunias

Think of dry, sandy soil and hot, sunny summers and one annual immediately springs to mind—the petunia. Select the large flowered grandiflora or the smaller (but more of them) flowered multiflora petunia for an easy to grow massed or edging effect. Where conditions of poor and alkaline soil also exist, choose single rather than double flowered varieties, and if your weather conditions are extremely adverse, take the multifloras over the grandifloras. Multifloras would also be better where beds are irrigated overhead since they recover more quickly from the water and are more botrytis resistant. Try the new variety of multiflora 'Summer Madness' which is a unique reddish pink for non-stop color all summer. Outstanding grandifloras are the many colored members of the cascade, Flash, Cloud, Sails or Magic Series.

Verbena

An excellent companion to petunias is the heat-resistant verbena. Its colors cover the rainbow, so it is easy to choose a variety to complement one of the many solids, stripes or picotees of the petunia. A relatively new variety of verbena called "Sangria" is a deep wine red and a good choice for dry spots with red, white or blue petunias. Verbena can also be effectively used alone in beds, borders or planters, especially where soil is poor. For heat and drought resistance and minimal care, portulaca is another excellent choice.

Celosia

For a touch of the bizzarre and a bolt of strong color in a dry, sunny location, the celosia is the answer. Available in either plumed or crested varieties, celosia withstands poor soil and has a variety of uses in annual beds.

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PARK • PRACTICE • PROGRAM

Grist

A publication of the Park Practice Program

The Park Practice Program is a cooperative effort of the National Park Service and the National Recreation and Park Association.

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The Park Practice Program includes Trends, a quarterly publication on topics of general interest in park and recreation management and programming; Grist, a quarterly publication on practical solutions to everyday problems in park and recreation operations including energy conservation, cost reduction, safety, maintenance, and designs for small structures; Design, a quarterly compendium of plans for park and recreation structures which demonstrate quality design and intelligent use of materials.

Membership in the Park Practice Program includes a subscription to all three publications and a library of back issues arranged in binders with indices, and all publications for the remainder of the calendar year.

The initial membership fee is $105, annual renewal is $45. A separate subscription to Grist is $20 initially and $12 upon renewal. Subscription applications and fees, and membership inquiries should be sent only to: National Recreation and Park Association, 3101 Park Center Drive, Alexandria, VA 22302.

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Articles, suggestions, ideas and comments are invited and should be sent to the Park Practice Program, National Park Service, Washington, D.C. 20240.

Safety

Life-Saving Jugs

Hundreds of people drown each year as onlookers who either can't swim or are afraid to risk their own lives at the hands of a panic-stricken victim stand by helplessly. Many could have been saved if there had been some type of throwable floatable object available.

The Cumberland Basin Water Safety Council has developed a simple and inexpensive way to provide a handy device for this purpose. Two one-gallon plastic jugs are tied together with four feet of nylon cord with a loop in the center and weighted with just enough sand water or gravel to make them easy to toss to a drowning person. The tops to the jugs are then glued on with rubber cement or silicone.

Two sets of the jugs are hung on posts placed at intervals along swimming beaches. A metal sign on the post explains their purpose and cautions people not to use them as playthings.

The life-saving idea had such obvious merit that a local dairy volunteered to supply all of the jugs needed to install such devices on the ten Corps of Engineers lakes in the Cumberland Basin and to put water safety slogans on all their jugs going to retail outlets.

This article was submitted by Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers.

Editor's Note: Untrained persons are cautioned not to enter the water and attempt a rescue. Such rescues require special training and practical skills. Otherwise, the would-be rescuer places himself or herself in serious jeopardy.

Roadside Cleanup Warning Sign

Roadside cleanup crews in the Lake Mead National Recreation Area (Nevada-Arizona) normally cover many miles of roadway in one day. As a safety precaution they normally set out signs that read "Roadside Cleanup Ahead," to forewarn motorists passing by.

When a motorist passes the sign, he or she is alert for the upcoming workers for a short distance. However, the workers could be many miles further down the road and the warning sign is often forgotten by the time a motorist reaches them.

Maintenance Man Steve Cottrell at Lake Mead solved this potentially dangerous problem by designing this roadside cleanup warning sign. The sign pinpoints the exact distance a motorist must be on the alert for the workers and considerably adds to the safety of both the motorist and the workers.

Power Tool Safety Switch Cover

Boat Mechanic Bill Jean of the Lake Mead National Recreation Area (Ariz-Nev) designed this power tool safety switch cover.

It is fabricated from a piece of 3/32" x 1" flat stock that was pre-drilled and then bent in a vise. One-quarter-inch aluminum drive rivets were used to attach the cover. With the cover over the switch, an object, such as a pencil or nail, must be pushed through the hole to turn the tool on.

In the past there were several accidental starts of their radial arm saw but since Jean's new safety cover was installed (for over a year now), there have been no problems.

Jean adds a note of caution: The cover must be removed from the electrical box for installation of the switch cover and it must be insured that the fasteners used to attach the switch cover cannot contact electrical components.

Editor's Note: This safety switch cover has possible application on other power tools.

Portable Water Safety Program

The increasing number of boating accidents and drowning fatalities is often directly related to the lack of training or instruction received by victims.

Dan Hendrickson, a Corps of Engineers Park Technician on Lake Barkley in western Kentucky suggested the implementation of a portable boating and water safety demonstration unit, consisting of small boats and water safety equipment. The unit is transported in a small two-wheel trailer towed by a medium size car or truck to campgrounds and day-use areas for on-site water safety instruction.

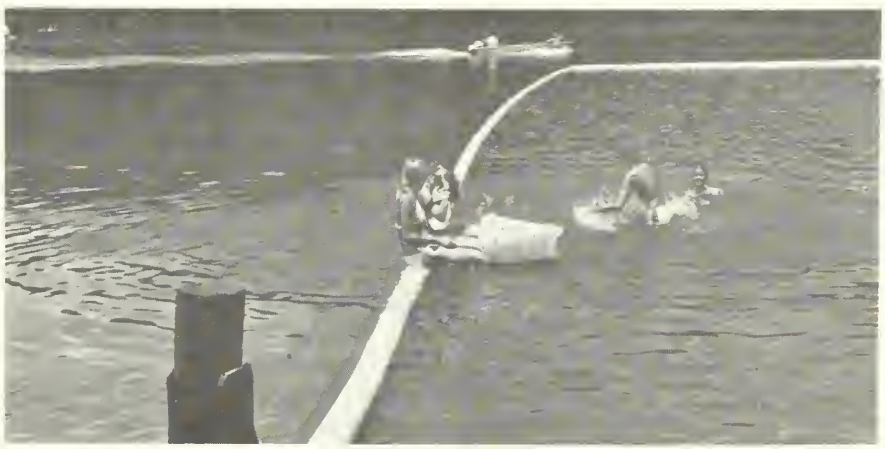
Program topics include Boating Operations, Personal Floatation Devces, First Aid, Navigation Aids, CPR, and Knots. The highlight of the program is a "Hands On Demonstration" using a small (39" wide x 84" long) fiberglass boat. Powered by a fisherman's trolling motor, this craft safely introduces trainees to actual on-the-water boating procedures, boat-handling exercises, and boating safety requirements.

This portable unit allows an instructor to reach large numbers of people who are actively using water recreation facilities.

Hendrickson received a $75 Department of the Army Award for his suggestion.

This article was submitted by Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers.

Better Beach Marker



A hazard is often created at lake and river swimming beaches by boaters who either cross the buoy/cable line into the swimming area or tie the bow of their boat to the cable, which usually causes the rear end of the boat to swing over the line.

Accidents to swimmers and damages to the cable and the boats have resulted when inattentive boaters have started their engines in this dangerous zone.

Todd Yann, Corps of Engineers' Ranger on Lake Barkley in western Kentucky, suggested that swimming areas be marked off with 12-to-20-foot sections of six-or eight-inch PVC pipe filled with foam and capped on each end. The foam adds strength, water-tightness and floatation.

Each cap has an eye bolt, which is linked to other sections by the use of a swivel. The line is secured to the shoreline by steel shackles that allow it to fluctuate with the water level.

This formidable barrier effectively prohibits the intrusion of boats into the swimming area, while also serving as a psychological barrier to keep swimmers and bathers on air mattresses from venturing out too far. Higher initial costs are offset by significant savings in the long term, and a safer recreational experience is provided for swimmers.

Our thanks to Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers for sharing this idea with GRIST subscribers and readers.

Integrated Pest Management—Essential Elements for a Successful Program

by James L. Sherald, Ph.D.

Environmentally sound and effective pest management presents a formidable challenge to park managers. Park systems are often complex designs of diverse vegetation and recreational features requiring high quality maintenance. Inherent in the diversity of park resources is a wide array of insect, pathogen, weed, and vertebrate pests. These pests impinge upon the park directly by attack and indirectly by requiring the expenditure of maintenance resources for their control.

Most pests have traditionally been "managed" by the application of pesticides on a routine calendar schedule, or as an emergency, "knee jerk," response to an infestation long out of control. Although pesticides, when properly applied, are usually effective, routine use is costly and seldom provides permanent control.

The potential for pesticide exposure is a public health concern in heavily used urban park and recreational facilities. Even when pesticides are applied properly, posing little or no threat to the environment or the visitor, the anxiety created by their use may diminish the visitor's park experience.

The real and perceived environmental threat of conventional chemical pest control as well as its expense and short-term effectiveness should stimulate managers to reevaluate conventional approaches to pest management and consider an alternative.

Integrated Pest Management, (IPM), is an alternative which minimizes pesticide use and emphasizes tactics more likely to provide long term control. IPM is most simply defined as a "decision making process" [1] that helps a manager to decide: if there is a real or potential problem requiring treatment, where the treatment should be focused within the site/pest complex, when action should take place, and what mix of strategies and tactics - biological, mechanical, chemical, and educational - should be used. A full discussion of the principles of IPM and procedures for introducing IPM into park systems is presented in "Integrated Pest Management for Park Managers A Training Manual."[1]

The National Park Service's National Capital Region (NCR) embarked upon a transition to IPM in 1979. NCR is largely an urban region with an array of pest problems typical of urban East Coast parks. Pest management prior to 1979 was primarily a conventional chemical approach. To assist NCR in its transition to IPM, the John Muir Institute's Center for the Integration of the Applied Sciences (JMI/CIAS), a pioneer in urban IPM, was retained with funding from EPA's Office of Pesticide Programs and the NPS's (Washington Office) Division of Biological Resources.

The JMI/CIAS IPM project was part of a larger urban ecology program pursued by NCR's Ecological Services Laboratory. The purpose of the IPM initiative was to develop IPM case studies for some of the major pest problems affecting the Region. An IPM Binder Series was developed for four major pests: mosquitoes, rats, yellowjackets, and azalea lace bugs. The IPM binders were developed as a self-help tool for park managers. (A limited number of IPM binders and IPM Training Manuals are available upon request through the Regional Integrated Pest Management Coordinator, NCR Ecological Services Laboratory, Washington, DC 20242 or the Servicewide Integrated Pest Management Coordinator, Division of Biological Resources, National Park Service, Washington, DC 20240.)

The major objective of NCR's IPM initiative was to demonstrate how the IPM transition could be made and sustained. The program illustrated that several key elements are essential for a successful program.

Transition to IPM should be initiated with a comprehensive analysis of procedures, costs,

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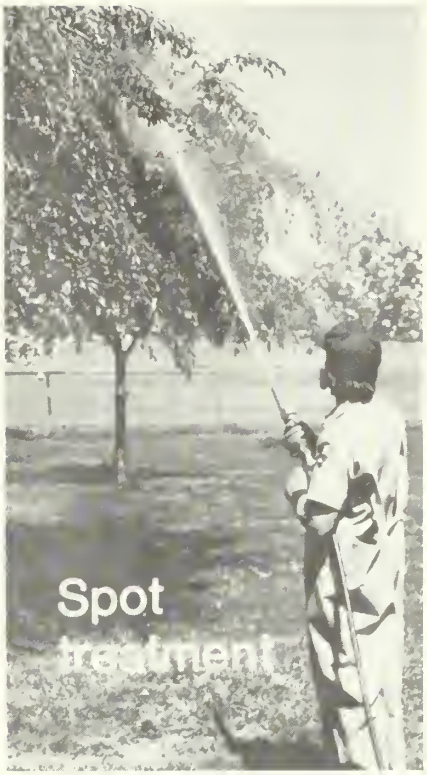
efficacy, and necessity of current pest management projects. Frank discussions with employees at all levels, particularly field personnel, will provide an accurate description of current efforts. All projects should be evaluated, particularly long-standing projects that may have more of an historical or traditional basis for existence rather than a real need. Pesticide applications keyed to a calendar rather than a monitoring program are often applied when the pest isn't present or is present at levels unnecessary for control. For example, in NCR's assessment of pest management programs it was found that a fungicide treatment was applied annually to hundreds of hollies for a disease that was not a problem. This traditional annual treatment emanated from fear of a pest rather than a real need determined through monitoring.

Prioritization of pest problems will help in directing the transition to IPM. A careful analysis of current pest management activities will help managers to rank pest problems in relation to the threats they pose to the resource and the investment entailed in their management. In NCR, Dutch elm disease is the most significant pest management problem. Control of the beetle vector required annual applications of methoxychlor accounting for the majority of the Regions's pesticide use. A comprehensive IPM plan has been developed which emphasizes sanitation as the tactic for beetle



control and limits use of methoxychlor to spot treatments.[2]

The analysis will also reveal pest problems that can be easily and permanently solved with a minimum of effort. A serious yellowjacket infestation in a picnic area causing as many as 57 stings in one year was reduced to 2 by simply providing lids for trash receptacles and lids for beverage containers. The immediate success of a simple solution such as this demonstrates the logical, common sense nature of IPM and stimulates the pursuit of IPM strategies for other pests.

Pest problem analyses can be a valuable exercise not only in providing solutions to pest problems, but also in addressing other management issues as well. Pests should always be considered as possible indicators or warnings that some aspect of the resource and/or its management has gone astray. For example, a rat infestation in an urban park is a good indicator of poor waste management and an abundance of rat habitat. Poisoning may reduce the rat population, a symptom of a larger problem, but poisoning will only provide temporary relief. If management can direct its efforts to improve sanitation and reduce habitat the rats will be permanently controlled and other problems such as litter and high pigeon populations may also be reduced.

All efforts at alternative management require a full understanding of the pest's biology and its relationship to the resource. A serious infestation of carpet beetles in one of NCR's curatorial facilities appeared to require immediate pesticide treatment. With first consideration of the pest as a "problem indicator" a quick analysis of the pest's life history revealed that it can live on decaying bird remains. Site managers, directed to examine an enclosed chimney in the facility, found over 100 dead bird carcasses. Space spray treatments may have provided temporary control, but elimination of the beetle habitat provided a permanent solution. The full understanding of the pest's habitat and biology enabled managers to use the pest as an indicator of a more significant maintenance problem.

When possible, the appropriate response should be directed at the cause of the problem to achieve long term control, rather than the symptom which provides only temporary relief.

Professional analysis of pest problems at the site is often critical in developing a management strategy. The level of expertise required cannot always be provided by park staff. However,

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assistance may be readily available through consulting or regional staff professionals. NCR's Ecological Services Laboratory has added an IPM Assistant to work with the Regional Pest Management Coordinator. NCR's pest management team has made over 80 site visits in 1983, most at park request. Site visits commonly show that many "pests" do not warrant control. Unnecessary treatments and anxieties created by the mere presence of a suspected "pest" can be overcome with information and simple reassurance from a professional.

Frequently, site visits also reveal problems entirely different from those suspected by staff personnel. For example, staff concern over a suspected cockroach problem in an interpretive exhibit in NCR was actually diagnosed by the regional pest management team as saw-toothed grain beetles. By removing a box of corn meal, used as part of the exhibit, the problem was solved.

IPM places emphasis on preventative pest management. Pest problems analyses often show that many successful site/pest relationships are inadvertently designed into the system and could have been prevented at the planning and design stage. A mass planting of disease-susceptible crabapples commits a manager to several annual fungicide applications throughout the life of the planting. By selecting a disease-resistant cultivar the same landscape effect can be achieved without costly and potentially environmentally unsound maintenance.

Azaleas are understory plants in their native habitat. When planted in full sun they are extremely susceptible to azalea lace bug. By recognizing the azaleas natural habitat and simulating it in the landscape, the lace bug, which may require two to three insecticide applications per season, can be avoided. Brick and stone walkways and plazas laid in sand rather than mortar present a major management problem when weeds develop in the joints. Mechanical weeding is laborious and leaves unsightly brown plant debris. The installation cost is more expensive if mortar is used, however, considering the cost of perpetual weed management, the additional installation cost is justified.

In short, conventional pest "control" often involves no more than remedial pesticide applications to suppress a problem introduced and sustained by design. The most effective IPM strategy is to circumvent these problems at the design stage. The old adage "you can pay me now or pay me later" is quite appropriate. To pay later is to pay more - monetarily and environmentally.

Within NCR critical reviews of plans for new parks and new plantings in existing parks are performed by the Tree Advisory Committee. The Committee is composed of horticulturists, landscape architects, and pest managers. Potential pest problems are a significant committee concern requiring review of species susceptibility to pests, species adaptability to the site, procedures for site preparation and planting and other factors that may directly or indirectly affect the health of the plant and its vulnerability to pests.

Although plan review and alterations cannot possibly anticipate and correct all potential problems, a comprehensive review by a multidisciplinary team may circumvent many costly and potentially disastrous situations. As the experience and persistence of such a committee increases it can become a prime force in an IPM program.

Once the transition to IPM has been made it cannot be left static. The multifaceted, progressive nature of the IPM approach requires constant reevaluation and

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change as new information and technology become available. A staff specialist, qualified in IPM, should be allowed time and resources to assist park managers in identifying and evaluating problems, obtaining information, evaluating new tactics, and performing the oversight and reevaluation each project warrants. Left on its own, without constant evaluation and stimulation, IPM can easily revert to conventional chemical "control."

[1]*Olkowski, William and Helga Olkowski. 1983. Integrated Pest Management for Park Managers; A Training Manual. National Capital Region, National Park Service. pp. 90.*

[2] *Management Program for the Perpetuation of the American Elm Tree in the Nation's Capital. Save-the-Elms Task Force. National Capital Planning Commission. December, 1983. pp.17.*

James L. Sherald, Ph.D., is Plant Pathologist/ Integrated Pest Management Coordinator for the National Park Service's National Capital Region.

Movable Lantern Holders

Are lantern burns scarring the trees in your campgrounds? The unsightly catface scars caused by lantern burns weaken the tree, provide entry places for insects and disease, and lessen the aesthetics of a wooden campsite.

Movable lantern holders are being used with success at campgrounds operated by the Nashville District, Corps of Engineers on J. Percy Priest Lake and Old Hickory Lake. People generally don't hang lanterns on trees if a more convenient holder is available. The disadvantage of a permanently fixed lantern holder is that a camper may want light in other places. The movable lantern holder allows campers to place a holder in the most convenient place.

The movable lantern holders are made with the manufactured lantern posts set in concrete inside an old tire. A board is placed under the tire when the concrete is poured. The finished product is a durable holder that can be rolled and put where the camper wants to use it.

This article was submitted by Carolyn Bauer, National Resources Management Branch, Nashville District, U.S. Army Corps of Engineers.

Heavy Duty Picnic Tables

In an effort to reduce vandalism and theft of picnic tables in recreation areas, the Nashville District Corps of Engineers' has begun using heavy-duty picnic tables.

The tables are constructed of treated pine boards 4'' thick and 6'' to 10'' wide. Weighing between 350 to 500 pounds, the tables are too heavy for most thieves. They can be moved somewhat, however, by campers and picnickers, who are seldom satisfied with a permanently attached table. The tables can also be moved without destroying them if they need to be relocated to another site or used in a group for special events. But the weight of the tables also eliminates a lighter table's potential for tilting and falling when two people are seated on one side.

Costs of the material needed to build a table of this type averages between $90 and $175 . . . a reasonable figure considering that only one such table placed at four different lakes in the Nashville District has been destroyed or stolen in the past three years.

This article was submitted by Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers.

Vocational Schools Can Help

Budget restraints and limited training funds often handicap the construction of needed new facilities and the development of additional job skills. Corps of Engineers Resource Managers on Lake Cumberland in Kentucky and Dale Hollow Lake in Tennessee have been able to overcome this handicap, however, by using the capabilities of their state's vocational schools. The Clinton County Vocational School in Albany, Kentucky, built five Visitor Entrance Stations on Lake Cumberland that saved an estimated $1000 in labor costs. The Corps supplied the plan and materials for construction of the hexagonal booths, which have five windows and one door. The unusual design of the structure presented a technical challenge that the school was happy to tackle.

The Vocational Technical School in Livingston, Tennessee, has rebuilt machines and automotive parts, constructed picnic tables, and trained Dale Hollow employees in the use of computers . . . all at fractions of costs prevailing in the private sector.

This article was submitted by Ranger Jim Robbins, Old Hickory Lake, Nashville District, U.S. Army Corps of Engineers.

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Use celosia with care and discretion as it is very bright, and don't plant it outside until spring weather is reliably stable or it will bolt to seed and not bloom. Apricot Brandy is a good variety whose color seems to blend better than other celosia's.

Where sunny "hot spots" exist, shy away from geraniums and marigolds and instead try spider flower *(Cleome)* or gazania. Kochia is another annual that is useful as a hedge and background that tolerates extreme heat and dry soil, but it is rather nondescript until fall when its lacy foliage turns brilliant red. Flowers are all but invisible. For a low growing ground hugging annual in shades of white and pink, particularly where air pollution is high, plant vinca, especially where summer conditions are hot.

Salvia

Although many plants that tolerate heat are also drought resistant, salvia prefers a rich, moist soil. Used as an edging, massing or background plant, salvia has spikes of red, white or purple that do equally well in full sun or part shade. Use red salvia with caution as too much of it will be distracting to the overall design. When selecting varieties, try the Carabinieres, Red Hot Sally or St. John's Fire among the lower growers and Red Pillar, America, Bonfire or Splendens Tall where tall plants are needed. There's also a new coral salvia

Marigolds in Seattle Center Park.

this year called Champagne.

Marigold

Where flower beds are "normal," regularly watered and not overly fertilized, one of the favorite annual choices for sun is the marigold. Shades of cream, yellow, orange, bronze and red cover plants anywhere from 6 inches to 3 feet high from early summer to frost, especially if faded flowers are picked off. Don't be surprised if the tall "American" marigolds don't bloom until late summer, for they are photoperiodic and need short nights. It would be best to pick another annual than the American marigold as a tall background to a marigold planting for season-long bloom. Lower growing French marigolds are excellent for borders and beds and bloom almost non-stop as do the triploids which are a cross between American and French.

The fragrant white, pink and purple blooms of the sweet alyssum are a good selection for edging marigold beds as they have the same soil, light and water requirements. They're better than marigolds in one respect—faded flowers fall off cleanly and don't need to be removed manually, thus lowering maintenance. They can also be used alone where a low growing spreading plant is needed and are good near benches because of their sweet scent. Select Carpet of Snow (white), violet Royal Carpet or lavender Rosie O'Day.

Nicotiana

The flowering tobacco (nicotiana), especially the recently introduced "Nicki" series that comes in a variety of colors, fits well in massed beds or borders in sun or light shade where watering is a regular activity as it prefers moist soil. Nicotiana grows easily from seed that drops from the flower; if you're lucky some of these plants will live through the winter and give you a head start on next year's flowers.

If you can provide frequent watering and fertilizing, deadheading of faded flowers and enjoy full sun, warm days and cool nights, geraniums can be used effectively. They're often best left for container accents although some of the new hybrid types grown from seed make effective bedding plants. If you use them near the office, public buildings or parking lot, choose white or pink varieties as they show up better at night.

Shade Annuals

Shade is a problem in many situations where dense and

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Flower beds at Milwaukee County Park.

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mature trees block out the light, but is one successfully overcome with the right choice of annuals. Wax begonias in tones of white, pink, or red are one of the best of the shade annuals because they are more drought tolerant than the others, plus their faded flowers drop cleanly. Their neat, mounded appearance is desirable in formal borders and beds. Where heat and humidity are high, choose bronze leaved ones over the types with green foliage.

The impatiens is one of the favorite shade annuals for its ease of care. Where soil is dry or the sun hits the beds for long periods of time, impatiens will need watering to prevent wilt. Be cautious when choosing impatiens varieties as there are some with strong orange, coral or fuchsia hues that do not blend well with other colors.

For something different in the darker shaded areas, try the bright foliage markings and variegations of coleus. As flower spikes form in late summer, they should be pinched off to keep the plant from going to seed and dying.

Where do you plant to color the park? It depends, naturally, on your budget and maintenance capabilities how much you can add to the park landscape, but even the leanest budget can afford low-care flowers along areas most frequented by the public—near parking lots, rest rooms, information buildings, and shelters. If you are not experienced in planning flower beds, keep your first efforts simple, with one main color and one or two complementary colors. In time you'll learn what looks and grows best together.

If space is a deterring factor, a few container plantings or hanging baskets will add interest and accent, and brighten up the setting anywhere in the park. If you have a patio area for picnicking or snacks, this would be a perfect spot for pots of flowers. Choose a potting mix of half peat moss and half perlite and/or vermiculite for good drainage and water retention.

Bedding Plants Inc., a nonprofit association dedicated to increased use and appreciation of bedding plants, offers free tip sheets to assist you in planning and planting annual flowers beds and container gardens. Send a self addressed, stamped envelope to Flowering Annuals and/or Container Gardens (please include either or both in the address), Bedding Plants Inc., 210 Cartwright Blvd., Massapequa Park, NY 11762.